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THE Journal OF THE IOWA STATE MEDICAL SOCIETY

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THE JOURNAL

of the

Iowa State Medical Society

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Blue Shield States Its Case

How Trustees Can Best Serve the Future of Blue Shield

LOUIS H. BAUER, M.D.

NEW YORK CITY

IN SURVEYING the various Blue Shield plans, we find that boards of trustees vary widely in their makeup, in their relationship to the medical profession and in their attitudes toward basic Blue Shield philosophy. Boards also vary in their administrative functions and methods.

I believe that all this variety tends to weaken Blue Shield and that certain very basic principles should govern *all* boards of trustees. Boards' adherence to these principles may decide the future of our plans.

In an article of mine, recently published, entitled "The Future of Blue Shield," I gave examples of the effects that follow upon a lack of unity in the medical profession. I am sure many of you are personally aware of how government controlled medicine was swept into countries like England, Sweden, Greece and Japan. I'm also sure that you are following the events in Belgium, France, India and Thailand.

You know that wherever the profession has stood together as a unit, it has been able to make a successful stand against complete government encroachment.

Today, in the United States, since most patients use insurance as a means of paying for their medical care, the profession has an excellent opportunity to make a firm, united stand against our government's further intervention in medical care. All that the doctors need to do is to join behind one, single plan that they themselves sponsor and control. Whether or not the physician approves of insurance is beside the point. Insurance is here to stay, whether or not we like it. There is absolutely no turning back to the system in vogue that we knew 25 or more years ago.

COMPOSITION OF THE BLUE SHIELD BOARD

To begin with, the board itself must be under the direct control of the medical societies, either by virtue of a majority representation of physicians on the board or by whatever other effective means of control the societies devise.

It may well be that the societies feel better repre-

sented by certain knowledgeable, competent laymen. If so, all well and good. The point is: the medical societies should have the ultimate power. We cannot expect the societies or their physician members to continue supporting the plans unless this power is given them. The reasons for this are self evident. We are offering our members physician services. We ask physicians to agree to specific fee schedules and, in the service benefit plans, we ask the physician to accept our payment as full reimbursement when he treats patients in certain income brackets. The doctor cannot be expected to agree to these provisions unless he has a controlling voice in establishing them.

As to non-medical members of the board, it should be remembered that physicians taken as a whole are poor businessmen and poor financiers. They need the advice of those who are experienced in these fields. Therefore, there is a need on Blue Shield boards for business executives, financiers, public relations directors and actuaries.

How far the additional general public or labor should be represented is a controversial question. This is something each plan must decide for itself, keeping the following in mind. Other plans, such as commercial plans, also sell medical care insurance. Labor unions, too, set up health plans—but

This is the third of a series of articles discussing health insurance problems. The papers, some of them by Iowans and others by physicians from outside the state, are intended to provide a broad, factual base for really informed opinion.

Participation in Blue Shield requires certain responsibilities of its members. (1) They must keep informed. (2) They must actively search out informed and dedicated persons to direct Blue Shield affairs. (3) They must learn not to use Blue Shield as a buffer between disagreeing segments of the medical profession. (4) They must come to realize that Blue Shield is regulated by insurance laws and principles. (5) They must rededicate themselves to the service principle on which Blue Shield was founded. (6) They must believe in Blue Shield and make the weight of their ideals and their morality felt in determining its aims.

Dr. Bauer, a past-president of the AMA, is president of United Medical Service, Inc. He gave this address in Chicago at the Annual Conference of Blue Shield Plans, April 27-May 1, 1958.

the medical profession plays no part, nor does it pressure to play a part, on the governing boards of these organizations. However, just as these organizations should *consult* medicine, so should medicine consult the general public and labor. Board membership, on the other hand, is a moot point.

THE BOARD'S RESPONSIBILITY TO THE DOCTORS

I have discussed the composition of the board, and I should next like to speak of the specific things a board may do to improve its relations with the medical societies.

Thus far, only Blue Shield has offered the doctors the control they desire and need. In some Blue Shield plans, however, this control has weakened, or has been taken away from the doctor altogether.

It is not uncommon to hear remarks such as the following from doctors:

"Our Society has nothing to say about our Blue Shield plan."

"We are never consulted about policies."

"Dr. A was originally suggested by us for the board but he never tells us anything, and he no longer represents us."

Then, on the other side of the picture, we have remarks from the plan directors such as:

"What right did the medical society have to do that?"

"What do we want doctors for when we are discussing coverage?"

All this points out the fact that some of our plans are no longer doctors' plans except in name. Not all of this is Blue Shield's fault, but often it is the fault of the medical society in letting control of the plan slip out of its hands. The fact remains, however, that whatever the reason, *it is the duty of the board of trustees to see to it that this control is strengthened or, where necessary, returned to where it belongs—in the hands of the profession.* The key to the correct balance of Blue Shield strength lies in the relationship of the board to the medical societies it represents.

Most important—Blue Shield must never become a third party! It must only continue as an agent of the medical societies, doing for them what they cannot do for themselves—administrative work, devising contracts, and so on. It is up to the medical members of the board to see to it that their medical societies are constantly informed of these activities; and these same medical members must bring the voice of the societies to board meetings.

The medical societies should have the right to nominate the medical members of the Blue Shield board. Ideally, in small plans, they can perhaps elect them. But no physician should be elected unless he has been at least nominated or approved by the medical society of which he is a member.

Plan trustees must see to it that no major change in policy is approved by the board unless the

changes first meet with the approval of the medical societies. This applies to such plan policies as the extent of coverage offered, service benefit levels, fee schedules and so forth.

Of course, some recommendations of the medical societies may not be feasible, because of financial or actuarial considerations. It is my opinion, however, that no item in the schedule of allowances should be set merely on the basis of funds available. If a reasonable fee, one acceptable to the physicians, is not possible, then either that allowance should be *made* possible financially, or the item should be paid for on an indemnity basis. No physician should be asked to accept as full payment an allowance which he and his colleagues consider inadequate for the services rendered.

Trustees cannot be aware of the thinking of the members of their societies unless they attend their meetings, report what the plan is doing, and ask for suggestions. The medical society should feel that the trustee elected to represent it is conversant with the thinking of that society—that he is, in fact, their representative.

Trustees, too, should encourage their societies to appoint committees to study and consider all matters pertaining to Blue Shield.

THE BOARD'S RESPONSIBILITY TO SUBSCRIBERS

Besides having a responsibility to the medical societies, the board also has a major responsibility toward its subscribers. These responsibilities manifest themselves in legal matters, in matters dealing with finances, and with information to subscribers. Briefly, I would like to touch on each one.

The legal obligation is, of course, most important. The corporation is licensed under law. Trustees must therefore see to it that all acts of the corporation are in full compliance with the law. The types of coverage, the wording of contracts, control of payments, the nature of advertising, of investments, expenditures of funds, etc. all may have legal aspects and must, therefore, be carefully considered.

The board of trustees should employ competent legal counsel and should be guided by his legal advice as a matter of protection to the subscribers, the corporation and the trustees. The legal counsel should attend all meetings of the trustees and executive committee. He should have every matter having any possible legal implication referred to him for advice.

With regard to finances. There will doubtless be members of the board who are financial experts. However, the board should appoint a finance committee to make recommendations as to investments. Ideally, this committee should recommend hiring an investment company to handle the details of investing. But the policies governing these investments should properly be decided by the board on the recommendations of the finance committee.

As for educating the public, it may seem to some that this is an obligation not within the compass

of a board's duties. I do not agree. For the public is, truly, the plan's most intimate concern. The public buys the contracts and their needs and desires must be determined. The public must be kept informed of the activities of the plan; of the contents of their contracts; and, while this may seem obvious, the public must also be educated to distinguish between Blue Cross and Blue Shield. I am sorry to have to admit that even the medical profession needs education on that.

All this brings into play the matter of advertising and literature used for distribution to both doctors and subscribers. Trustees should be familiar with all publications, so as to be able to formulate the general principles governing the makeup of their contents. This would include the contents of any newsletters, bulletins, radio and television programs, as well as talks before medical societies or other groups. Trustees naturally are not expected to prepare this material nor to send it out, but arranging for proper distribution and dissemination is the board's duty. Board members may also arrange speaking engagements for themselves or for their plan executives.

Furthermore, the trustee should attend as many national meetings as possible so as to be abreast of the thinking in other parts of the country. United Medical Service has found it very beneficial to invite not only its medical trustees but officials of its sponsoring medical societies to attend the Annual Professional Relations Conference. This conference has given them an insight into the philosophy and problems of Blue Shield that they could not otherwise have obtained.

THE BOARD'S RELATIONSHIP WITH BLUE CROSS

Having touched on the board's relationship to the profession and to the public there remains but one major area of mutual interest that is the concern of every trustee. That is the board's relationship to Blue Cross.

Originally Blue Shield was very small; and it started out five years after Blue Cross. Blue Shield, therefore, had very much to gain by a close relationship to Blue Cross. Because it was larger and had a greater fund of experience, Blue Cross was able to help the younger plan immeasurably. Both plans worked closely, both benefited from the sharing of talent and experience, and both grew quickly. There was a tendency in those early years, because Blue Cross was the older, more experienced partner, for Blue Cross to become the dominant half of the liaison. Now, however, the situation is changed. Blue Shield has a depth of experience it lacked before and is growing faster than Blue Cross. I believe that the two plans should now be partners on an equal footing. Neither should dominate the other.

If we look at the plans around the country, we see some of them completely divorced from one another. Others are almost completely unified, even to having the same personnel on both boards. Still other plans are separate except for a joint

enrollment department. This, especially in the larger plans, has often proved a great convenience and savings to both plan and subscribers.

Complete integration, even of just the boards, however, does not seem to me to be in the interest of anyone. Blue Cross is controlled by the hospitals, and Blue Shield by the physicians—and their philosophies differ in so many respects that it is hard to imagine any joint board working smoothly without one plan's overpowering the other.

It is very disheartening to view the state of affairs that exists in those areas where the two organizations are more or less one in fact, even if not in theory. Because Blue Shield has been the junior partner, it seems often to act hesitantly, without vigorous conviction in the course it must follow, content to be hand-led and spoon-fed by the elder Blue Cross. What is to be gained by one plan's hiding in the shadow of the other? Blue Shield is no longer in swaddling clothes. It has reached adult state. Both plans are working to serve the community. They should work in harmony. They should share those duties that will benefit both plans, but each plan should be master of its own fate.

The first step that should be taken to establish a Blue Shield plan's independence is the appointing of a director separate from Blue Cross. Certainly, when Blue Shield was in its infancy, it could not afford a full-time director. Since there was a need to establish a good deal of early planning, much was gained by having Blue Cross's director also serve Blue Shield. But, again, today things have changed, and just as there is much to be gained by having separate boards, so is there much to be gained by each plan's having its own director. The duties and responsibilities of each plan have grown to too great a height to allow one man to fulfill both jobs effectively without one being secondary to the other.

BOARDS OF TRUSTEES MUST REALLY WORK

These are matters which must be decided by the boards of trustees of the plans, but they cannot be decided intelligently unless each trustee is thoroughly familiar with all aspects of his plan's activities. It has been found, for instance, that some boards meet only once or twice a year, and that the operation of the plan is left entirely to the plan director or to the board's executive committee. This is unfortunate. Unless the board meets frequently, how can the trustees keep abreast of what is going on, or how can the members expect to decide the proper course of action for the plan in matters that come up from day to day? Executive committees are excellent organizations, but they should meet to handle emergencies, to sift material and make preliminary studies for presentation to the board itself. In my opinion, the executive committee should not habitually be given the full authority of the board.

By the same token, the plan director should be

expected to carry out the board's policies—but the director himself should not be the one to determine policies. Plan policy should be determined by the board and must reflect the expressed desires of the medical societies. The plan director must carry out these desires.

Such matters as co-insurance, experience rating, and service benefits are proper matters for trustees to discuss. Their decisions, however, must reflect the many responsibilities they have to the public and the medical profession. Trustees must decide whether Blue Shield is to be a community plan or a plan for a favored few. But we must keep uppermost in our thoughts that if Blue Shield does not protect the *entire* community—including the poor risks—the government will step in. When it does, it will not just take the poor risks, but will sweep up everyone without exception. All one has to do is to look abroad to see what will happen if voluntary health insurance fails in this country. I will go even further and say that if Blue Shield should fail—then we shall most assuredly see government medicine moving in to take over.

SUMMARY

In conclusion, I think I can safely say that being a trustee does not involve just a name or a title, but entails a mature and substantial responsibility for policies and education. Blue Shield must not fail, but it will unless the plans work in close co-

operation with their medical societies, and convince them that the plan is not a third party, but only their agent, carrying out certain technical, administrative aspects of the program which the doctors themselves have set up.

Now, may I make an appeal to the profession itself? Medicine can no longer be practiced as it was 25 years ago. It involves not only art and science, but socio-economics as well. Physicians as individuals and medical societies as a whole must take an interest in the whole problem of rendering adequate medical care. The medical profession has had a 2,500-year tradition of ministering to the sick. It must keep up that tradition and must, itself, take the leadership in programs to ensure proper medical care. Unless it does, the leadership will be taken away by others.

During the past 11 years I have made two trips around the world and 21 trips to Europe. I have seen what has happened when the medical profession weakened and permitted itself to be thrown off the tracks by a government machine. I have seen the debasing of the standards of medical care. I shudder to think what will happen—in fact what is happening right now—in this country as a result of the apathy of the medical profession.

As trustees, see to it that your sponsoring bodies are alerted to these problems. And elect to your boards far-seeing, capable and energetic people.

Physicians' Gifts to Medical Colleges—1957

AMEF figures for 1957 are not so up-to-date as one might like, but since a considerable portion of the Fund's income arrives in December, the 1958 report hasn't yet been compiled.

When one compares Iowa doctors' gifts in 1957 and in 1956 (see J. IOWA M. SOC., 48:31 (Jan.) 1958), he finds that the number of "alumni" contributions—i.e., the number of gifts made directly to medical schools, rather than through AMEF—increased from 295 to 471, and the Iowa dollar

total rose from \$26,835.71 for all gifts during 1956 to \$36,234.00 in 1957. A comparison between the Iowa physicians' 1957 record and those of doctors in neighboring states shows that Iowans have been doing fairly well, but aren't yet leaders.

The number of Iowa contributions through AMEF is as large as it is chiefly because the Baldridge-Beye Loan Fund, amounting to just \$1 per ISMS member, is annually turned over to the Fund.

State	No. of Physicians in State	Number of Contributors			Amount of Contributions		
		AMEF	ALUMNI	TOTAL	AMEF	ALUMNI	TOTAL
Illinois	12,211	9,226	1,502	10,728	\$199,257	\$172,391	\$371,648
Indiana	4,364	664	460	1,124	19,568	27,092	46,660
Iowa	2,715	2,779	471	3,250	7,841	28,393	36,234
Kansas	2,199	496	400	896	15,128	16,483	31,611
Michigan	8,118	223	1,383	1,606	9,621	51,823	61,445
Minnesota	4,281	1,604	552	2,156	36,846	19,599	56,445
Missouri	4,752	222	933	1,155	9,127	72,821	81,948
Nebraska	1,515	152	460	612	9,497	49,774	59,271
North Dakota	483	65	59	124	2,549	5,880	8,429
Ohio	10,986	717	3,646	4,363	33,142	132,567	165,708
South Dakota	490	228	68	296	8,647	5,794	14,445
Wisconsin	3,920	126	712	838	8,687	49,264	57,951

Today's Problems and Opportunities in Voluntary Health Insurance

E. J. FAULKNER

LINCOLN, NEBRASKA

TODAY'S PROBLEMS and opportunities in voluntary health insurance are so varied, so challenging and so numerous as to preclude adequate description here. Voluntary health insurance, like the practice of medicine, is a many-splendored thing, involving concerns that are personal and intimate, while at the same time being of tremendous community significance.

It is apparent that doctors increasingly realize the extent to which the private practice of medicine depends upon the success of voluntary health insurance. Certainly we in the insurance business know that our opportunity to serve the American public will endure only as long as medical practice in America is private and free.

Because of its very rapid growth in the past two decades, voluntary health insurance is now recognized as the method of choice for the vast majority of Americans to use in financing health-care costs. Payment of such expenses out of income or savings at the time they are incurred is no longer feasible for most people. Not only have health-care costs risen sharply because of inflation and because of the necessities of complex modern treatment, but high income taxes have inhibited savings, and our proclivity for mortgaging income through installment-purchase plans has vitiated most people's ability to meet unexpected expenses out of their monthly pay checks.

Since more than 70 per cent of the American people have turned to voluntary health insurance for protection against the financial impact of ill health, our business shares with physicians a grave responsibility for the proper and economic operation of the whole health-care system in the public interest. This system, unique to America, is based upon a partnership of physicians in private practice, voluntary general hospitals and the voluntary health insurance industry. The bright side of the problems that confront this partnership is the opportunity the partnership has to provide greater service.

The problems of voluntary health insurance today are of three kinds: (1) those having to do with extending coverage to a larger portion of the population; (2) those having to do with improving the quality of benefits; and (3) those encompassing the relationships between voluntary health

insurance and the other segments of our economy and society.

I wish to dwell principally upon the problems and opportunities stemming from the interrelationships between voluntary insurance and the rest of society, but it may be well for me to note in passing that substantial progress is being made both in the extension of voluntary health insurance to larger numbers of people and in the improvement of the coverage that it provides.

HEALTH INSURANCE FOR THE AGED

The problems of extending coverage have to do primarily with the aged, with impaired persons and with those who live in remote places. Historically, the health insurance business has been so preoccupied with satisfying the quickening demand for coverage from people who present no unusual underwriting considerations that only in the last few years have we been able to devote much of our time and facilities to the unique requirements of special segments of the population. Of these, the aged have the most pressing problems. With the lengthening of the life span, there are already 14,000,000 of our citizens over 65 years of age, and it is expected that by 1975 the total will have grown to 21,000,000.

Adequate insurance for the aged is somewhat difficult because it is in the later years of life that disability takes its greatest toll. For example, the cost of providing hospital care for persons over age 65 is three to four times as great as the cost of such care for people in their working years. The problem is further complicated by the fact that older people usually have substantially less financial competence than those still productively employed. But the importance of providing adequate protection for the aged is such that good answers must be found.

Hopeful approaches are now being made by insurance companies. Insurers have extended age limits for the issuance of new insurance, as well as the age to which the insurance of those covered during their younger years can be extended. Most group plans now provide that the insurance of the employee may be continued after his retirement, with the cost spread over the entire group. Another hopeful innovation is insurance that becomes paid-up at the time of retirement. This is accomplished through the collection of premiums

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during the working years of the insured in amounts that are calculated to be somewhat larger than necessary to pay current health-care costs. The excess is then conserved to meet the expenses that will accrue after the insured's retirement. In the autumn of 1957, one prominent health insurer offered an opportunity to every Iowa resident 65 years of age or older to enroll in an experimental plan of hospital and surgical insurance without being required to furnish evidence of insurability. That and other experiments being carried on by insurers give promise of solving the problem of protecting the aged.

Underwriters are also addressing themselves to the needs of the impaired risk. The person in substandard health who is eligible for group insurance has no problem, since evidence of individual insurability is not required for group coverage. For those in our population who are impaired but are ineligible for group protection, the business is developing a system of sub-standard insurance based on premiums "rated" according to the seriousness of the impairment. We expect that this technic will be developed with success comparable to that achieved in underwriting substandard life insurance.

The problem of people who live in remote places is of a different kind. It has been alleged that voluntary insurers have not reached the rural population. This allegation is premised simply on a comparison of the percentages of rural and urban people insured. The criticism fails to recognize that the rural person is more removed from the complicated apparatus of modern medicine and is less inclined to insure. The tradition of home care is still strong on the farm. Thus, the problem of insuring the remote risk is a sales problem rather than an underwriting problem. In solving it, insurers have adopted new merchandising methods such as the use of rural electrification districts and farm cooperatives for distributing insurance in rural areas. Currently, the volume of health insurance in force is increasing at a rate exceeding 10 per cent per annum. Thus satisfactory progress is being made in the extension of coverage to people who are not now insured.

IMPROVEMENTS IN HEALTH INSURANCE BENEFITS

The pace at which voluntary health insurance has grown has been matched by improvement in the benefits provided. Undoubtedly, this rapid expansion has been stimulated by wider popular appreciation that today voluntary health insurance is better protection than ever before. Exclusions are no longer common in health insurance. The length of time that benefits are payable and the amounts of such benefits have been brought into conformity with the real needs of the insured. The introduction just a few years ago of major medical expense insurance (sometimes referred to as catastrophic or comprehensive coverage) marked a tremendous forward step in the improvement of

health insurance. This coverage, subject to an initial deduction adjusted to the economic status of the insured, provides for the reimbursement of 75 or 80 per cent of all of the health-care expense incurred, subject to a maximum for a single illness—as much as \$15,000 or \$20,000. Major medical expense coverage is very broad. It imposes few contractual limitations on the amount of benefits available for particular kinds of treatment or expense. It promises to be the ultimate answer to the need for thoroughly satisfactory, worry-free financing of health-care costs.

A NEED FOR FURTHER EDUCATIONAL CAMPAIGNS

It is in the area of the relationships between voluntary health insurance and the other segments of our society and economy that our business finds some of its knottiest problems and greatest opportunities. In matters of sales and underwriting, insurers can exert a degree of control over what is done and have an opportunity to move forward as rapidly as their knowledge and facilities permit. In our relations with the general public, with government and with our partners in the American health-care complex, progress cannot be unilateral and must depend on mutual understanding and co-operative effort.

The most important relationship of voluntary health insurance is, of course, with the general public. Its members are our customers. In a democratic system, the wishes of the majority will be reflected in the kinds of laws that regulate us and the taxes to which we are subjected. Members of the public are free to give us their patronage or to withhold it. One of the fascinating—if occasionally troublesome—characteristics of health and health insurance is that it is a subject on which every person has an opinion. A recent Gallup poll concluded that health is of greater interest to people generally than is any other single subject. Newspapers, recognizing that fact, devote tremendous lineage to health topics. Six New York City and Washington, D. C., papers in a 15-week period carried over 1,000 articles—some 14,000 column inches—on health matters. It is inherent in all of us to desire good health and long life. Matters affecting our health are intimate, personal and very important. This preoccupation with health has engendered in the general public a susceptibility to the appeals of the faddists and minority pressure groups that have been most vocal about medical and economic nostrums.

For the preservation of the private practice of medicine and voluntary health insurance, it is particularly important that Americans generally be disabused of some mistaken concepts that are now too widely held. The broad and vigorous educational program which is needed, if that result is to be achieved, must be undertaken by all of the partners in our system of voluntary health care. We need to re-sell the concept of private medical practice, and can do so by contrasting it with the

government-dominated medicine which has produced an inferior quality of medical care in other countries. We need to debunk the notion that government can provide health care or can finance it more economically than private enterprise can. Government care could be cheaper only if the quality of the care were adulterated, and even with inferior quality, the cost would be higher.

It is a notorious fact that when government undertakes to do what can be done by private enterprise, costs always rise. Sir William Beveridge estimated that the cost of the United Kingdom's National Health Service would level off at £170,000,000 per annum in 1965. Instead, it now stands at nearly £700,000,000, in spite of many restrictions introduced to reduce its cost, and all signs point to a steady further increase with no limit in sight.

In the past, the American people have been strongly influenced by our tradition of personal initiative and independence. They forthrightly supported Congress in its rejection of the national health program proposed in the Wagner-Murray-Dingell Bills of the Truman Administration. But their sophistication in these matters has not extended to an appreciation of the fact that socialized medicine can be foisted off upon them a little bit at a time. Witness in this connection the apparent popular approval of the inclusion of permanent and total disability benefits in the Old Age and Survivors Disability Insurance System, the continuance of free medical care for veterans suffering from non-service-connected disabilities, and the dozen other programs through which government is absorbing more and more responsibility for the health care of a larger and larger part of the population.

Typical of proposals for further socialization of health care is the so-called Forand Bill, now pending in Congress. It would increase present OASDI benefits, expand the taxable wage base from \$4,200 to \$6,000 per annum, and pay most hospital, surgical and nursing home expenses for all who are eligible to receive old age and survivors benefits. No matter what appealing emotional gloss organized labor and its other supporters may put upon this proposal, it would effectively destroy the minimum-floor-of-protection theory of the Social Security System, and would establish an out-and-out program of socialized medicine for a substantial and growing segment of our people.

As is invariably the case, the proponents' cost estimate of an initial \$1,000,000,000 per year is grossly inadequate. Independent actuarial studies indicate that first-year costs would be at least twice what the proponents claim, and that would be but a beginning! The subtlety of the proponents' argument is illustrated by their suggestion to voluntary insurers that they support the Forand Bill because, by relieving voluntary insurance of any responsibility for protecting the aged, the measure would strengthen the voluntary insurance system. One wonders whether these people think the na-

tion's doctors and insurers are so naive as to believe that it is possible for anyone to remain "just a little bit pregnant."

DEDUCTIBLE AND COINSURANCE PROVISIONS ARE ESSENTIAL

It is true that much of the political appeal for these programs lies in the "something for nothing" delusion which is in reality nothing but a morally indefensible shifting of today's costs to our children, who will be tomorrow's taxpayers. It is necessary in our relationship with the general public that we do more than we have done to inform people about the nature of voluntary health insurance and its essential role in financing the costs of private practice and voluntary hospitals. Although more than 800 insurance companies and some 300 service plan type insurers are carrying the message of voluntary health insurance to the public through nearly a third of a million field representatives, many people still fail to realize that insurance creates no wealth—that it is simply a device for spreading the cost of ill health across the entire insured group, rather than allowing it to fall with crushing impact upon the relatively few individuals who suffer financially crippling illness.

We need greater public understanding of the reason why voluntary health insurance must employ some reasonable controls against over-utilization and abuse. The contingency against which voluntary health insurance furnishes protection is particularly susceptible to subjective bias. The occurrence and extent of loss are far less easily demonstrated than is the case with life insurance, where death is objectively demonstrable, or with fire insurance, where all can see that a loss has occurred. The subjective influences in health insurance, the thing which we in the business call "the moral hazard," can make successful sharing of the risk of ill health impossible unless it is restrained by the sort of control that aligns the self-interest of the insured with that of the insurer. It has been well said that it is impossible to underwrite an insurance benefit successfully unless the enjoyment of the benefit is incompatible with the desires of the insured. These controls against abuse must take the form of making disability financially unpalatable. Barring economic safeguards in the insurance contract, some insureds will be tempted to malingere, particularly in times of business retardation.

The insurance business needs to do a better job of explaining the rationale of such provisions as the deductible and coinsurance clauses. All of us are familiar with the deductible in automobile collision insurance, and accept it readily. The purpose of a deductible in health insurance, just as in auto collision policies, is to eliminate from coverage the first few dollars of loss. It is well known, particularly to doctors, that every year each of us sustains some expense because of a scratch or a sniffle, or loses a day or two from work because of a minor

disability. If insurers attempt to provide benefits for these trifling, recurrent and seemingly inevitable losses, they must collect an insurance premium adequate not only to pay the benefit involved, but also to meet the proportionately heavy expense of administering such small claims. This is a dollar-swapping type of coverage that is patently uneconomic. Yet, it is amazing how widespread the popular demand is for benefits that cover the first dollar of expense and the first day of disability. In their efforts to make voluntary health insurance more effective and to abate the inflation of health care costs, insurers—whether of the indemnity or the service type—need to emphasize the importance of the deductible provision. In the process, they will conserve the insured's premium dollar for the purchase of more adequate benefits against the really insurable loss imposed by serious, expensive and even bankrupting illness.

In the same vein, there is much to be done in educating the general public to the necessity of an economic control against extravagant treatment. This control is provided by the coinsurance clause which requires that the insured bear a part of every element of the expense incurred in his care. It checks a tendency to "shoot the works" when an insurance company is to bear the entire expense of treatment. By abating extravagance and overutilization, the coinsurance provision helps keep losses in line and enables insurers to issue such broad, all-inclusive coverages as major medical insurance at a premium that is within the reach of most people.

We have no doubt that many of the public have been misled by criticism of the necessary economic controls found in health insurance contracts. The critics assert that the deductible and coinsurance arrangements constitute economic deterrents to early and adequate care. We have never seen evidence that would support such a contention. Rather, we suspect that if there are those in our population who fail to secure timely health care, it is because of the relatively low priority that they place on medical expenditures. When most families spend more for automobiles, new household appliances and even liquor and tobacco than they do for health care, it is doubtful that reasonable controls in an insurance contract can constitute formidable economic deterrents to their securing adequate care.

In all of their problems with the general public, doctors, hospitals and insurers have available but one really effective course of action: widespread public education. In a democracy, the will of the majority ultimately prevails. For public decisions to be well taken, they must be based on informed opinions. I fear that most of our conflicts with the public today are traceable to a failure by business and professional men to give effective leadership to the public. We have been too preoccupied, too disdainful of politics, too supine in our resistance to socialistic ideas.

It is late in the day, but we must bestir ourselves and become as adept at propaganda as are those who by design or by simple awkwardness would destroy the American system. Doctors, individually and collectively, can make a significant contribution to better public understanding of the issues in voluntary health insurance. The doctor's is a respected voice in his community. His influence among his patients extends beyond purely medical matters. Health insurers through their representatives everywhere can and are doing an educational job. We have organized the Health Insurance Institute to be our public relations arm, answering the general public's questions about the how, why and what of voluntary insurance. Shortly, the Institute will commence a program of magazine advertising that should add materially to the popular understanding of our business.

LET'S UNDERSTAND ONE ANOTHER COMPLETELY

The inherent partnership consisting of medicine, the hospitals and the voluntary insurers certainly argues for their close cooperation. That there has not always been the most perfect understanding among the partners in the health-care complex is perhaps attributable to the adventitious way in which the American pattern has developed. Though our broad objectives are entirely the same, past failures to know as much about each other as we should have given rise to irritations which, happily, seem now to be abating.

Yet, I am sure that many doctors have questions about the impact of health insurance on their practices. If doctors accept the fact that most of their patients must rely today on some third-party mechanism to help them defray their health-care costs, then the physician's concern is whether the insurer exerts a deleterious effect on the quality and quantity of medical care and its ethical administration. Voluntary health insurers, such as the insurance companies and Blue Cross-Blue Shield, are set up to provide financial assistance to the insured, as distinguished from providing medical care. It is difficult to determine the extent to which the existence of insurance has influenced the quantity of professional care. Undoubtedly, insured patients seek treatment earlier and seek more adequate treatment because their insurance eliminates or minimizes any financial obstacle. Because voluntary health insurance is purely a financial arrangement, it is doubtful that it has had any unfavorable effect on the quality of the care provided. Certainly the traditional patient-physician relationship is not adversely affected under insurance arrangements in which all financial aspects of the coverage are the concern of the insured and insurer, and all medical relationships remain exclusively between the patient and his physician. Unlike closed-panel plans, voluntary health insurance preserves the insured's right to free choice of physician.

Occasionally, it is asked whether insurance encourages the corporate practice of medicine, par-

ticularly in hospitals. Here again, since the insurance benefit is financial assistance, not rendition of medical care, this would be an unlikely effect. However, if an insurance arrangement were to provide for payment of charges for professional medical services only if submitted as a part of the hospital bill, then probably the insurance would encourage the practice of medicine by hospitals. Happily, insurers make every attempt to avoid affecting the pattern of medical care.

Insurers have no desire to dictate the conditions of medical practice, or to control fees. They have an obvious interest in working with doctors and hospitals to prevent inflation of health-care costs, but they recognize the right of the doctor to establish the price of his own services. Advisory fee lists and relative value fee schedules compiled by your societies for the information and guidance of doctors are valuable to insurers in underwriting insurance contracts reasonably related to prevailing charges in the area. But these schedules are and should be your product, not the insurers'. We hope that they will be more widely utilized, because all are better served when the insurance benefit is reasonably adequate. Then, patient dissatisfaction is avoided, the collection problem of the doctor is eased and the insurance company has a better satisfied policyholder.

If occasionally you are tempted to be critical of benefits that are inadequate to meet the expenses of a particular case, please remember that the fault may not lie entirely with the insurer. Insurance companies want to sell adequate amounts of protection, but what the insurer can sell depends upon the willingness and ability of the customer to buy.

SOME THINGS THAT SERVICE PLANS NEED TO DO

Within the family circle of voluntary health insurance, individual insurers sometimes have problems of relations with each other. The business of health insurance is one in which open, free and keen competition is a foremost characteristic. Over 1,000 insurers vie for public patronage. Unlike some other lines of insurance, in health coverage there is no action in concert. The problem of relationships within the business has been primarily between the insurance companies and the service plans. To a lesser degree there have been problems of relationships between those two forms of insurer and the so-called group-practice plans. There have been times, I am sure, when wholesome competition for public patronage has engendered animosities that have contributed to misunderstanding. Some people active in the promotion of service-plan insurance have sincerely believed that the purpose of the insurance companies was to preempt the field. On the other hand, some insurance company executives have felt that service-plan insurers were dedicated to the achieving of a monopoly, even at the expense of accepting federal subsidization. These misunderstandings

have been as unfortunate as they have been unnecessary. The American public is best served when, through the free competition of insurers of all kinds, the buyer of insurance is permitted the right to pick and choose the type of insurance that he wants. Competition encourages experimentation with new and better benefits and methods, and competition makes successful innovations generally and promptly available. Thus, though all forms of voluntary health insurance have a common goal—adequate private financing of health-care costs—there is a need for all sound and legitimate insurers, irrespective of kind or character.

In the public mind, voluntary health insurance of all types is the same. Patently, the whole structure is strengthened if all voluntary insurers recognize their community of interest and work effectively together. Far from desiring to hamper them, the insurance companies have a genuine concern for the continued strength and success of the service plans.

Because voluntary health insurance can ill afford any failure, we are troubled over some of the trends that seem to threaten the future of the service plans. Specifically, we are concerned with the long-continued reluctance of the service plans to incorporate the sound insurance principles of the deductible and coinsurance in their contracts. The moral hazard always present in health insurance necessitates some economic deterrent to overutilization, but service plan administrators have seemed wedded to their costly attempts to cover the first dollar of expense. In the same vein, service plans have eschewed coinsurance on the grounds that it constitutes an obstacle to early and adequate care. Their disinclination to institute such controls has unquestionably contributed to their increasingly unfavorable experience.

Even under compulsory systems, as Great Britain and other countries have found, complete coverage from the first dollar of expense engenders costs that are insupportable. The costs of periodic health examinations, other preventive procedures, and trifling, recurrent health expenses are items that are much more economically budgeted than insured. The insurance companies hope that learning from their own experience, the service plans soon will embrace necessary safeguards against overutilization.

We in the insurance companies are also anxious over what we believe to be a serious defect in the rate-making philosophy and practice of the service plans. Insurance premiums must be equitable, adequate and not *unfairly* discriminatory. These requirements are well known and understood. It is less well understood that to be competitive, insurance premiums must also be *fairly* discriminatory. Discrimination among groups of insureds based upon an evaluation of the chance of loss is essential to equity. If the same community-wide rate applies to all who are insured regardless of marked

differences in the hazards they present, the better risks will in effect be subsidizing the poorer risks. Survival of the enterprise in a competitive atmosphere requires that each insured pay a premium proportional to the hazard that the insurer has assumed for him. If there is unfair discrimination, or if there isn't fair discrimination, a process of selection will take effect, and the enterprise will be left with only the poorer risks and will be faced with steadily mounting loss ratios.

Not a few of the difficulties of the service plans (or of those of them that use the same community-wide flat rate for all who receive the same scale of benefits) have stemmed from their loss of the better insureds to companies that provide coverage at a rate more accurately reflecting the risk transferred. Advocates of the community-wide rate contend that unless the good risks subsidize the poor risks, those who present the greater hazard cannot afford to buy insurance. Doubtless there are segments of our population whose hazard is so great or whose resources are so meager that insurance is beyond their reach. This is not an indictment of voluntary health insurance, however, for it isn't, after all, an eleemosynary institution. The cost of health care for such people is a proper charge against the whole body politic, through the usual channels of assistance and relief, and should not be saddled solely on the participants in voluntary insurance arrangements. It is recognized that precise discriminations in rates in so dynamic a field as health insurance is not always possible, but fair discrimination to the greatest practical degree is essential. We hope that as service plan managers recognize this truth, they will remove the impediment of the community-wide flat rate from which their operations have been suffering in increasing degrees.

AVOIDANCE OF GOVERNMENTAL REGULATION

Most of you are familiar with the successive increases in premiums that have been sought in the last few years by more and more of the service plans in order to maintain their solvency. In some states, the law requires approval of service plan premium rates by designated public authorities. This, of course, is rate regulation.

When the service plans originated, incorporated as they were in many states under other than insurance statutes, they were an unknown quantity. Then, there may have been sound reasons for requiring that their charges be subject to government approval. Now, however, the service plans are very much a known quantity, and their premium charges are policed by competition just as are the rates of insurance companies. We believe service plans should be relieved of the incubus of public rate regulation. Health insurance premium rates are, or certainly should be, established by each insurer's own experience. The diversities of experience, benefits and plans of operation among

health insurers preclude the adoption by public authority of a single standard or criterion for determining an acceptable rate.

It is not a criticism of supervisory authority to recognize the fact borne out in the experience of railroads, public utilities and insurers subject to rate regulation that needed changes in rates can be authorized only after the utility or insurer has lost money over a period of months or even years. In the field of health insurance, the service plan insurers subject to rate regulation have suffered because of the considerable lapse of time between the time when the need for a change was recognized and the date when it was authorized. Underwriting margins in health insurance are normally narrow, and prompt adjustment of premium rates to meet changing conditions is essential to the continued solvency and continued availability of coverage.

It is unfortunate that where the state has the responsibility for regulating the premium charges of service plans, supervisory authority is subject to enormous political pressures stemming from the personal and emotional implications of this kind of insurance. Not only is such rate regulation of service plans impractical; it is unnecessary. The most effective, economic and timely regulator of the price the public pays for protection is the open and free competition prevalent in the business. The insurance companies can be counted upon to support the service plan insurers in their efforts to free themselves from this unneeded, expensive and cumbersome interference with the sound management of their plans.

Now for a final aspect of the relationship between voluntary insurance and government. Regulation of insurance has traditionally been at the state level. The strength of the health insurance business is a reflection not only of the aggressiveness and ingenuity of the insurers but of the integrity and wisdom of state regulatory agencies. Such regulation has been made effective without imposition of a standard policy form. Rather, insurers have had wide latitude to develop ever-better coverage through research, trial and error. Though some people may decry the multiplicity of policy forms and benefits, they overlook the fact that improved types of coverage now are available only because insurers have been free to experiment. Because we believe so implicitly in the salutary results of such experimentation, we are concerned with recent attempts—notably in the State of New York—to impose statutory conditions in health insurance contracts that would seriously hamper further free developmental effort.

The essence of the New York proposals is that after an individual health insurance contract has been in force for a period of time—say two years—the contract shall become non-cancellable and guaranteed renewable. These proposals also would require that the right of conversion to individual

from group coverage be solely at the option of the insured. It cannot be denied that the effects of such regimentation would be to increase the cost of health insurance and to incline employers against hiring middle-aged people. Thus, these proposals would affect adversely the amount and quality of health insurance available, would reduce the number of people insured and would disrupt existing arrangements for continuing health benefits under group policies to retired employees.

When the real need for health insurance protection is as varied as the people who buy it, it is not in the public interest to compel people to purchase a particular and more costly form of insurance than they desire or can afford, or to do without it altogether. Often, proposals of this kind are put forward by sincere but ill-informed persons who argue that through statutory intervention they can remedy the imperfections in health insurance and thereby accelerate its progress.

We oppose such statutory encumbrances because the imposition of extremely heavy and largely unnecessary cost on the insurance buyer might well price the protection beyond his reach. If that were to occur, there would be an overwhelming demand for the state to supply or subsidize the insurance protection. And legislative intervention is unnecessary, for insurers are improving their record of continuance of coverage. They have found it feasible, without burdensome increases in premium rate, to include in their contracts a provision that the insurer will not discontinue coverage because of the deterioration of the health of the insured, but may retain the right to refuse renewal in the event of established fraud,

proved malingering or other behavior of similar character.

Another innovation in the modern health insurance contract is the provision that the option to renew coverage from term to term to a specified age is vested solely in the insured, but the insurer may alter the table of premium rates applicable to all insured of the same class, if necessary.

There is far less substance to the criticism sometimes heard that just when the insured needs his protection most, it is taken away from him. That is demonstrated by successive surveys of the actual experience of insurance companies which have shown terminations by the insurer to be but a fraction of one per cent of the insurance exposed to renewal. Governmental interference with the right of insurers and the buying public to enter into contractual arrangements of their own design can only hamper—not help—the expansion and improvement of voluntary health insurance.

There are many other points of conflict between voluntary health insurance and government. Among them is the matter of taxes, an increasing impediment to providence and thrift. The attempt of some instrumentalities of the federal government to supervene state insurance regulation is another area of concern. But space does not permit a discussion of them here.

Any realistic appraisal of today's problems and opportunities in voluntary health insurance, like appraisals of medicine itself, provides reassurance regarding the vitality, adaptability and irreplaceability of this intrinsically American institution. With physicians' cooperation, it will achieve increasingly its very high ambitions in public service.

Coming Meetings

In State

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| Jan. 14 | Obstetrics & Gynecology (SUI College of Medicine and the Bureau of Maternal and Child Health of the State Department of Health). University Hospitals, Iowa City |
| Feb. 17-20 | Refresher Course for the General Physician (Iowa Chapter of the American Academy of General Practice and the SUI College of Medicine). University Hospitals, Iowa City |
| Feb. 24-26 | Annual Meeting, Sioux Valley Medical Association, Sheraton-Martin Hotel, Sioux City |
| Feb. 24-27 | National League for Nursing, Inc. Hotel Savery, Des Moines |

Out of State

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| Jan. 4-7 | International College of Surgeons, Southeastern Regional Meeting of the United States Section. Americana Hotel, Miami Beach |
| Jan. 5-7 | Otolaryngology for General Physicians. U. of Minnesota, Minneapolis |
| Jan. 5-7 | Tenth Annual Postgraduate Course in Medical Technology. U. of Kansas Medical Center, Kansas City, Kansas |
| Jan. 6-16 | Reconstructive Surgery of the Nasal Septum and External Nasal Pyramid (Dept. of Otolaryngology of the College of Medical Evangelists and the U. of Southern California School of Medicine. White Memorial Hospital, Los Angeles |
| Jan. 7 | Physiological and Clinical Considerations of Respiration. U.C.L.A., Los Angeles |

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| Jan. 9-10 | Chest Disease Symposium (Tuberculosis and Health Association of Los Angeles County). Hotel Statler, Los Angeles |
| Jan. 12-16 | Internal Medicine, Especially Therapeutics (American College of Physicians). Illini Union Building, U. of Illinois College of Medicine, Chicago |
| Jan. 14 | Midwinter Symposium on Heart Disease (Los Angeles County Heart Association). Hotel Statler, Los Angeles |
| Jan. 14 | Pediatrics, Diagnosis and Management of Heart Disease in Infancy and Childhood. U. of Oklahoma Medical Center, Oklahoma City |
| Jan. 14 | Physical and Clinical Aspects of Respiration. U.C.L.A., Los Angeles |
| Jan. 15-16 | Gynecology and Oncology (U. of Nebraska College of Medicine and Division of Maternal and Child Health, Nebraska State Health Department). U. of Nebraska College of Medicine, Omaha |
| Jan. 15-17 | Newer Drugs in General Practice. U. of Minnesota, Minneapolis |
| Jan. 16-17 | Dermatology. U. of California, San Francisco |
| Jan. 16-18 | Annual Meeting, Southern California Chapter, American College of Surgeons. Coronado Hotel, Coronado |
| Jan. 19-20 | Symposium on Pulmonary Disease. U. of Kansas School of Medicine, Kansas City, Kansas |
| Jan. 19-21 | Sectional Meeting, American College of Surgeons. Francis Marion Hotel, Charleston, South Carolina |
| Jan. 19-23 | Neuro-Ophthalmology. N.Y.U., N.Y.C. |

- Jan. 19-24 General Practice Review. U. of Colorado School of Medicine, Denver
- Jan. 21 Symposium on Chest Diseases (Long Beach Cancer and Heart Associations and TB and Health Associations, Cosponsors). LaFayette Hotel, Long Beach
- Jan. 21 Physiological and Clinical Considerations of the Kidney. U.C.L.A., Los Angeles
- Jan. 21-22 Symposium on Gastroenterology. U. of Kansas School of Medicine, Kansas City, Kansas
- Jan. 21-23 Seventh Postgraduate Course on Diabetes and Basic Metabolic Problems (American Diabetes Association). Chase-Park Plaza Hotels, St. Louis
- Jan. 22-23 Anesthesiology. U. of California, San Francisco
- Jan. 22-24 Seventh Annual Cancer Seminar, Arizona Division of the American Cancer Society. Paradise Inn, Phoenix
- Jan. 22-24 Surgery for Surgeons. U. of Minnesota, Minneapolis
- Jan. 23 Seventh Annual Central California Cardiovascular Symposium (Fresno County Heart Association). Fresno Memorial Auditorium, Fresno, California
- Jan. 23 Symposium on the Ophthalmoscope: Its Use in Medicine. U. of Kansas School of Medicine, Kansas City, Kansas
- Jan. 23-24 American Society for Surgery of the Hand. Palmer House, Chicago
- Jan. 24 Adolescents. Children's Hospital, U. of California, San Francisco
- Jan. 24 Annual Symposium on Heart Disease, Orange County Heart Association. Disneyland Hotel, Anaheim, California
- Jan. 24-29 American Academy of Orthopaedic Surgeons. Palmer House, Chicago
- Jan. 25-27 Pharmacologic Approach to the Study of the Mind. U. of California, San Francisco
- Jan. 25-29 Rocky Mountain Traumatic Surgical Association. Aspen, Colorado
- Jan. 26-28 International Medical Assembly of Southwest Texas. Gunther Hotel, San Antonio
- Jan. 27-29 National Association of Methodist Hospitals and Homes. Sheraton-Jefferson Hotel, St. Louis
- Jan. 27-30 American Protestant Hospital Association. Jefferson Hotel, St. Louis
- Jan. 28-29 Symposium on Endocrinology and Metabolism. U. of Kansas School of Medicine, Kansas City, Kansas
- Jan. 29-31 Western Society for Clinical Research. Carmel-by-the-Sea, California
- Jan. 30-31 Seattle Surgical Society. Seattle, Washington
- Jan. 31-Feb. 1 Eleventh Annual Midwinter Radiological Conference (Los Angeles Radiological Society). Statler Hotel, Los Angeles
- Feb. 2-3 Treatment of Varicose Veins. Cook County Graduate School of Medicine, Chicago
- Feb. 2-4 American College of Surgeons, Sectional Meeting. Shamrock Hilton Hotel, Houston, Texas
- Feb. 2-4 Current Research in Endocrinology (American College of Physicians). Clinical Center Auditorium, National Institutes of Health, Bethesda, Maryland
- Feb. 2-5 Course for Physicians in General Practice (U. of California). Mount Zion Hospital, San Francisco
- Feb. 2-6 Vaginal Approach to Pelvic Surgery. Cook County Graduate School of Medicine, Chicago
- Feb. 2-13 General and Surgical Obstetrics. Cook County Graduate School of Medicine, Chicago
- Feb. 2-13 Surgical Technic. Cook County Graduate School of Medicine, Chicago
- Feb. 4 Physiological and Clinical Consideration of the Nervous System. U.C.L.A., Los Angeles
- Feb. 6-7 American College of Radiology. Drake Hotel, Chicago
- Feb. 7-10 Fifty-fifth Annual Congress on Medical Education and Licensure (AMA Council on Medical Education and Hospitals, Advisory Board for Medical Specialists and Federation of State Medical Boards of the United States). Palmer House, Chicago
- Feb. 9-11 American Academy of Allergy. Morrison Hotel, Chicago
- Feb. 9-11 American Academy of Forensic Sciences. Drake Hotel, Chicago
- Feb. 9-11 Symposium on Radiology. U. of Kansas School of Medicine, Kansas City, Kansas
- Feb. 9-13 Recent Advances in Cardiovascular Diseases (American College of Physicians). Mount Sinai Hospital, New York City
- Feb. 9-20 Office and Operative Gynecology. Cook County Graduate School of Medicine, Chicago
- Feb. 11 Urology. U. of Oklahoma Medical Center, Oklahoma City
- Feb. 11-13 American Academy of Occupational Medicine. Sheraton-Plaza Hotel, Boston
- Feb. 12-14 Society of University Surgeons. Denver
- Feb. 13 Management of Surgical Emergencies. U.C.L.A., Los Angeles
- Feb. 13-14 Annual Clinical Conference, Chicago Ophthalmological Society. Drake Hotel, Chicago
- Feb. 14 Management of Medical Emergencies. U.C.L.A., Los Angeles
- Feb. 16-17 Symposium on Hematology. U. of Kansas School of Medicine, Kansas City, Kansas
- Feb. 16-18 Seventh Annual Symposium on Metabolic Problems. Alameda-Contra Costa Medical Association and the Institute for Metabolic Research. Highland-Alameda County Hospital, Oakland
- Feb. 16-18 Congress on Industrial Health. Netherland Hilton Hotel, Cincinnati
- Feb. 16-20 Fourth Annual Postgraduate Course on Diseases of the Chest (American College of Chest Physicians). Sir Francis Drake Hotel, San Francisco
- Feb. 16-20 Dermatology and Syphilology for General Physicians. N.Y.U., N.Y.C.
- Feb. 16-27 Surgical Technic. Cook County Graduate School of Medicine, Chicago
- Feb. 17-20 Colorado State Medical Society, Midwinter Clinical Session. Shirley-Savoy Hotel, Denver
- Feb. 18 Physical and Clinical Aspects of the Kidney. U.C.L.A., Los Angeles
- Feb. 18-19 Symposium on Peripheral Vascular Disease. U. of Kansas School of Medicine, Kansas City, Kansas
- Feb. 19-21 Central Surgical Association. Montreal, Canada
- Feb. 19-21 First Chicago Postgraduate Course in Arthritis and Related Conditions (Five Chicago Medical Schools, Chicago Rheumatism Association, Chicago Orthopedic Society and Illinois Chapter, Arthritis and Rheumatism Foundation). Thorne Hall, Northwestern University, Chicago
- Feb. 19-21 Sixth Annual Seminar on Cardiovascular Diseases (Northeast Florida Heart Association and College of Medicine of the University of Florida). Prudential Auditorium, Jacksonville
- Feb. 20-21 Allied Health Course on Hearing and Speech. U. of Kansas School of Medicine, Kansas City, Kansas
- Feb. 21 Ophthalmology. Stanford University Hospital, Palo Alto, California
- Feb. 21-22 Neurology for Physicians. Standard University Hospital, Palo Alto, California
- Feb. 22-23 Family Endocrinology. U. of California Medical Center, San Francisco
- Feb. 22 Medicine in the Jet and Space Age. U. of California Medical Center, San Francisco
- Feb. 22-23 Family Endocrinology. U. of California School of Medicine Medical Center, San Francisco
- Feb. 22-24 Treatment of Hernia (Stanford U. School of Medicine). Palo Alto, California
- Feb. 22-25 California Medical Association Annual Meeting. Sheraton-Palace Hotel, San Francisco
- Feb. 23-24 Symposium on the Heart: Electrocardiography. U. of Kansas School of Medicine, Kansas City, Kansas
- Feb. 23-25 Cardiovascular Diseases for General Physicians. U. of Minnesota, Minneapolis
- Feb. 23-27 Recent Advances in Internal Medicine (American College of Physicians). Pennsylvania Hospital Auditorium, Philadelphia
- Feb. 23-Mar. 6 General and Surgical Obstetrics. Cook County Graduate School of Medicine, Chicago
- Feb. 25-26 Symposium on Neurology and Neurosurgery. U. of Kansas School of Medicine, Kansas City, Kansas
- Feb. 26 Physical Medicine and Rehabilitation. U. of Nebraska College of Medicine, Omaha
- Feb. 26-28 Sectional Meeting, American College of Surgeons. Hotel Vancouver, Vancouver



Scientific Articles

The Chemotherapy of Neoplasms

SAMUEL DVOSKIN, M.D.

NEW YORK CITY

ONLY 25 PER CENT of patients who have neoplastic diseases are being salvaged by the currently available surgical and radiotherapeutic methods of treatment. Most of such patients are without any form of therapy that is capable of an ultimate cure.

A series of chemical compounds, however, are capable of exerting significant palliative effects in patients with neoplastic disease. These agents include hormones, antimetabolites, cytotoxic materials, vaccines and tumor antibodies, and antibiotics or materials present in the filtrates of antibiotic cultures.

HORMONES

The hormones modify the endocrine environment to which the tumor is exposed, and are chiefly effective in controlling neoplasms arising from the secondary sex organs and those originating in the blood-forming organs.

In the male, the administration of female or estrogenic hormones effects an endocrine castration, and in some 80 per cent of patients with prostatic cancer, it results in a temporary and sometimes a prolonged remission. Estrogens are also effective in inducing remissions in about 20 per cent of females with disseminated breast cancer 10 or more years after menopause.

The administration of male hormones or androgens are effective in about 20 per cent of women in the younger age groups who suffer from metastatic breast cancer.

The adrenal steroids, or adrenocorticotrophic hormone, are effective in inducing a rapid remission in about 70 per cent of children with acute leukemia, and this is the treatment of choice for those acutely ill. Remissions may last for as long as nine months. In some patients with metastatic

breast cancer, a similarly rapid remission may be obtained with these steroids. When estrogen therapy or castration has failed to control the growth of prostatic cancer, the use of cortisone may also occasionally be effective in inducing a remission.

Thyroid hormone has been advocated for treatment in cases of thyroid cancer in an effort to suppress thyrotropic hormone production. However, no beneficial effect has been reported in other series.

ANTIMETABOLITES

The antimetabolites are designed to prevent the synthesis of essential materials needed by tumor tissue for its growth. The folic acid antagonists are the most widely used. These include aminopterin and α -Methopterin (or methotrexate). They prevent the conversion of folic acid to folinic acid, also known as the citrovorum factor, and thus block intracellular purine and pyrimidine synthesis. These agents are useful in the treatment of acute leukemia in children of the younger age group with white counts of 50,000 or less. Recently, it has been reported that six of 16 female patients with choriocarcinoma treated with methotrexate in high dosage had complete remissions for as long as 24 months.

The toxic effects of these agents such as lowering of platelet count, hemorrhage, sore tongue, cramps and diarrhea, may be reversed by the administration of folinic acid or citrovorum factor.

Another group of antimetabolites includes the purine and pyrimidine antagonists. The outstanding agent in this category is 6-mercaptopurine, otherwise known as 6-MP. This agent is useful in the treatment of acute leukemia in older children with high white counts, and in an occasional adult. Other purine and pyrimidine antagonists include 6-chloropurine; 2,6-diaminopurine; 8-azaguanine; pyrazolo (3,4d) pyrimidine; and 5-fluor-

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ouracil. These agents are not particularly more effective in man than 6-mercaptopurine, but they have been studied most extensively and have been found effective in experimental tumors in animals.

Vitamin antagonists, particularly the antagonists against vitamin B₂, B₆ or B₁₂ are experimentally employed, but no literature has grown up to indicate their definite usefulness.

Amino acid antagonists and analogues such as the ethyl analogues of methionine may prevent the utilization of serine and methionine, and so block nucleic-acid synthesis. Azaserine is an analogue of serine, and is useful in combination with 6-mercaptopurine in delaying the resistance which develops in patients treated with this agent for leukemia.

CYTOTOXIC AGENTS

Probably the most widely used cytotoxic agents are those alkalating agents which may serve to inactivate important enzyme systems. These agents are effective in inhibiting the growth of rapidly-growing tumors, and many of their effects resemble those of x-ray or other radiation therapies. Experimentally, they have been known to produce mutations and chromosomal abnormalities.

Of the alkalating agents, the aliphatic nitrogen mustard group of drugs are most widely used, especially mechlorethamine hydrochloride. This preparation is generally administered intravenously in an average dose of 0.2mg./Kg./day for two days. The material is particularly effective in the treatment of patients with Hodgkin's disease or other types of lymphomas at the stage where the disease is producing systemic symptoms such as fever, itching, etc., and in cases no longer amenable to x-ray therapy. It has also been found effective in occasional cases of bronchogenic carcinoma, in mycosis fungoides, and occasionally in anaplastic cancer.

The intracavitary administration of nitrogen mustard may occasionally prevent fluid reaccumulation, and reverse an otherwise hopeless situation. For example, two of our patients who were critically ill and dyspneic because of the presence of metastatic breast cancer in the chest fluid have strikingly benefited for 11 months from the administration of 20 mg. of nitrogen mustard into the pleural space.

An aromatic nitrogen mustard, chlorambucil or leukeran is particularly effective in the therapy of chronic lymphatic leukemia. This agent may be administered by mouth in a dosage of from four to 10 milligrams per day, and may result in a striking drop in the total white count and a remission in the course of this illness for protracted periods of time. This agent has also been reported to be effective in Hodgkin's disease that is no longer sensitive to nitrogen mustard or x-ray therapy, and even in an occasional case of chronic myeloid leukemia.

The other large group of nitrogen mustards includes those of the ethylene amines and in par-

ticular triethylene melamine (TEM). This agent is effective when administered orally, and has essentially the same type of activity as does mechlorethamine. The usual dosage of 2.5 mg. in the morning with 2 Gm. of bicarbonate of soda by mouth is effective, and maintenance doses in the range of 0.5 or 1.0 mg. every one or two weeks can be used. This agent may prove useful in Hodgkin's disease or other lymphomas, and is occasionally effective in the chronic leukemias. Combined with lowered x-ray irradiation dosage, TEM has been found effective in cases of retinoblastoma, permitting the preservation of vision that a large dosage of x-ray therapy would destroy.

The side effects of this agent, as well as of other nitrogen mustards, centers on the depression of the normal white count and the development of thrombopenias, and the dosage should not be pushed to the danger point, even though the damage that the drug produces is frequently reversible.

Other ethylene amines include triethylenephosphoramide (TEPA), an agent which is effective in dosages of from 5 to 10 mg./day intramuscularly for from five to 10 days. The THIO or sulfa derivative of this agent (THIO TEPA) is useful in dosages of from 10 to 40 mg., and can be administered intramuscularly about once a week, provided that due regard is given to the white blood count. Again, these agents are effective in the lymphomas, and may have considerable beneficial effect in the treatment of ovarian cancers. Recent experimental work indicates that high dosages of THIO TEPA pushed to the point of producing severe hematological depression may be effective in the treatment of an occasional case of malignant melanoma.

Another group of alkalating agents are the sulfonic esters typified by busulfan or myeleran, which exert cytotoxic effects principally on the marrow. They seem specific in depressing the granulocytopoietic tissue, and they are particularly useful in the treatment of chronic myeloid leukemia, where a dosage of 4 mg./day is used until the white count has been reduced to 20,000. Urethane has long been used in the treatment of multiple myeloma and chronic myeloid leukemia in a dosage of from 3 to 5 Gm./day, and may in some cases effectively modify this disease.

VACCINES AND TUMOR ANTIBODIES

In recent years, the possibility of modifying the growth of disseminated tumors through the use of vaccines or tumor antibodies has been given some consideration. Vaccines, particularly those of uterine cancers, have been produced in the patients themselves through the introduction of ground-up tumor extracts using Freund adjuvant. Dr. John B. Graham, who has recently tested them, reports that in some cases there was a striking reduction in the ascites tumors, and marked regression of the tumor. However, no uniformly

favorable effects were observed. Southam's work has suggested that patients suffering from cancer have a depleted ability to produce antibodies, and that may be the reason why they are unable to resist the growth of cancer cells implanted in them from tissue cultures. If so, the prospects of success for vaccines from the patients' own tumors are bleak. The low levels of serum properdin in cancer patients may be a factor in tumor-cell propagation in these patients.

This human experimental work may point to the possibility that antibodies should be generated elsewhere than in the host bearing the tumor. This has been proved in animals only.

A variety of antibiotics and materials found in the filtrates of antibiotic cultures have been sug-

gested as effective tumor agents. As a whole, this group has proved rather ineffective, though a wide range of agents have been tried.

CONCLUSION

These chemotherapeutic agents have been the means of demonstrating that the growth of disseminated neoplasms can be modified. Unfortunately however, although remissions can be achieved for extended periods of time, none of these agents has as yet been shown to be capable of curing any form of cancer.

It is hoped that with further research, agents may be found which will be more effective against tumors that are not curable by other available means of therapy.

Feeding Problems of Infancy

ROBERT C. FAIRCHILD, M.D.

MISSION, KANSAS

INFANT FEEDING problems may have no allure for the busy general practitioner, but the mother who comes to him for help may regard them as no less important than her latest attack of renal colic. Thus, the physician is obliged to gain the knowledge necessary to solve some of the common difficulties associated with the feeding of infants.

The age-old controversy of formula feeding versus breast feeding continues unabated in pediatric circles. Few will deny that breast feeding is ideal, if successful. It is convenient for the mother, and a sense of security is provided to the infant when he is held close for his feedings. It has not been shown, however, that the transfer of antibodies to the infant through breast milk affords him any significant protection against disease. Meyer's recent study demonstrates that there is less breast feeding of newborn infants in hospitals today than there was a decade ago.¹ Breast feeding is scorned by many mothers in today's society because it interferes with their social life or their employment. These socio-economic factors are perhaps largely responsible for the present popularity of formula feeding.

Any formula is an attempt to simulate mother's milk, and the perfect formula has yet to be developed. Such aberrations as a relatively high phosphorus content and the recently experienced deficiency in pyridoxine point out the difficulty of adapting cow's milk so that it can substitute satisfactorily for the human variety.

Comparative studies of breast-fed and bottle-

fed infants, conducted by British investigators, have revealed some interesting findings. Stewart and Westropp,² who observed 580 infants for one year, found that there was essentially the same bony growth in each group of babies, but that there was a 12½ oz. greater weight gain in formula-fed infants at six months of age. The two groups were not significantly different in the frequencies of upper-respiratory infections. The incidence of intestinal infections was lower in those infants entirely breast fed. The latter observation was confirmed by Stevenson.³ He also found, however, that the incidence of intestinal infections is lower primarily among breast-fed infants in low-income, low-intellect segments of the population. With proper formula preparation and in families at higher economic levels, the formula-fed babies had no more enteritis than did the breast-fed infants. Silver⁴ has studied the efficiency of the terminal sterilization used in this country, and has concluded that it can be done safely and with ease. The widespread use of this technic is expected further to decrease the frequency of enteritis in the low-income groups.

VOMITING

Whether breast fed or bottle fed, infants often present problems in relation to feedings, and mothers call upon physicians to solve them. One of the most frequent of these is the problem of vomiting. A careful history must be taken from the mother to ascertain whether the child is actually vomiting or is merely regurgitating. Oftentimes, the mother is asked to feed the child in the office so that her feeding technic and the infant's behavior can be observed. The important

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factors are the age of the infant at the onset of vomiting, the frequency and the relationship between vomiting and feedings, the force of the vomiting and the character of the vomitus. Having observed that the infant is actually vomiting, one must then proceed to determine the etiology.

Organic disease in infants frequently will produce vomiting as a non-specific symptom. Infections of the genitourinary tract or central nervous system may be accompanied by vomiting in infants, many times with the emesis as the presenting symptom. Intracranial lesions such as subdural hematoma, hydrocephalus and brain tumor must also be considered. Gastrointestinal infection and anomalies of the gastrointestinal tract are more common causes of organic vomiting in infancy.

Non-organic causes are of equal importance. Improper preparation of the formula, with excessive caloric concentration, may account for the intolerance. Faulty feeding technic—either “propping” the bottle, or hasty feeding and insufficient “burping”—may be followed by prompt emesis of the milk. Deliberate vomiting may be seen in an infant who is being force-fed solids against his will. He adopts the attitude, “You can get it down me, but you can’t make me keep it down.” Rumination, seen infrequently nowadays, is a manifestation of a disturbance in the emotional relationship between infant and mother.⁵

DIARRHEA

On the other hand, the feeding disturbance confronting the physician may be diarrhea. Again, a careful history and observation of stools is essential if one is to establish the fact that the infant is having diarrhea, and not having frequent normal stools.

Organic causes of diarrhea are the general rule, and such serious entities as celiac disease, mucoviscidosis and ulcerative or membranous colitis must not be overlooked. Dysentery due to *Salmonella* or *Shigella* can readily be diagnosed bacteriologically. The recent work of Neter⁶ and other workers is strong evidence that epidemic diarrhea of the newborn is due to pathogenic strains of *E. coli* and *B. proteus*. Fortunately, many of the infants seen with diarrhea have merely a mild nonspecific enteritis that is amenable to simple dietary restrictions.

As is the case with vomiting, diarrhea may be caused by improper preparation of the feeding, with excess caloric concentration either in fat or in carbohydrate. Paradoxically, diarrhea may also be due to insufficient caloric intake, as in “starvation diarrhea” or the diarrhea seen in the nursing infant whose mother’s milk is not rich enough. But whatever the cause, diarrhea in an infant must be treated intelligently and vigorously.

Either vomiting or diarrhea, or both, may result from food intolerance or food allergy in an infant. Many times, the differentiation between the two

is difficult, but the elimination of the offending food almost universally corrects the gastrointestinal manifestations. Pratt, in his plea for a critical attitude toward food allergy, has given a warning against unnecessary interference with the diets, nutrition and development of good eating habits in children,⁷ and his words should be heeded.

COLIC

The haggard, hollow-eyed mother who brings a well-nourished, crying infant into the office usually knows that her baby has colic, but she wants to know why, and what to do for it. These questions plague general practitioners and pediatricians, alike.

If the etiology is known, the treatment is relatively easy. Those infants who have the syndrome known as colic due to hunger or poor feeding technic (13 per cent), carbohydrate intolerance (31 per cent), butter fat intolerance (11 per cent), milk allergy (10 per cent) or other organic causes (13 per cent) are responsive to correction of the cause.⁸

It is the other 22 per cent of colicky babies—those in whom the cause cannot be determined—who present a problem to the physician. Is the infant the victim of emotional tension in the family? Certainly if emotional tension did not exist prior to the advent of the colic in the infant, it will soon afterward. Or does this baby merely have an immature gastrointestinal tract which cannot tolerate the gas as it passes through it? These questions remain to be answered.

Even though we do not know the cause of colic in these babies, the parents need help. The multiplicity of “colic drops” on the market proves that a pharmacologic cure has not been found. Kindly reassurance from the physician that the infant will do well in spite of the colic, and his continued moral support to the parents during this trying time constitutes the essence of therapy.

MISCELLANEOUS DIFFICULTIES

Occasionally, infants are seen who are “just not doing well.” The mother has no specific complaints, and the physician can find nothing obviously wrong on superficial examination of the baby. One must have a high index of suspicion with these infants, since they may be suffering from a chronic disease.

Infants with central nervous system abnormalities, kernicterus, early cerebral palsy or mental retardation are notably slow to gain and develop. The infant may have undiscovered chronic renal disease that is retarding his growth. Metabolic diseases less common in infants, such as diabetes, galactosemia or mucoviscidosis, may have no specific symptoms initially, except retardation of growth. Another group of infants who gain poorly are those who are being fed an inadequately planned diet in which the caloric and fluid re-

quirements of the baby are not being met. Re-evaluation of the infant's diet and correction of any deficiencies will produce an immediate response, as evidenced by an adequate gain in weight and improvement in the general nutrition of the baby.

Modern technics of infant feeding are based on present scientific knowledge, but are also influenced by custom and by the experience of the individual physician. There is general agreement that demand feeding is more appropriate than is adherence to a strict schedule. Demand feeding may be tempered with a little common sense, so that the entire household does not rotate around the newborn infant's every cry. The use of formulae containing 20 calories per ounce, and prepared by the terminal method of sterilization, is universally accepted, and is well tolerated by the majority of bottle-fed infants. Since orange juice is often poorly tolerated, the administration of a vitamin preparation containing vitamins A, C and D is recommended.

Beal⁹ has recently pointed out the trend toward earlier introduction of solids into the infant's diet. She has shown that whereas in 1946 cereal was being introduced at two months of age, meat at eight months and table foods at between 21 and 25 months, in 1955 cereal and fruit were being offered at one month of age, all purees by 4½ months, egg yolk at five to seven months and table foods at 13 months. Her study has further indicated that with this earlier feeding of solids, the iron intake has risen rapidly during the first year to a mean of 10 mg. daily. From the practical standpoint, early introduction of solids leads to fewer feeding problems, since solids are offered to the infant at a time when he is usually agreeable to accepting anything resembling food. Also, there usually is a tendency for these infants to sleep through the night at earlier ages than formerly, for their daily caloric requirements have been met during the parents' waking hours.

Some of the presently used technics of infant feeding have been subjected to scrutiny recently by the Committee on Nutrition of the American Academy of Pediatrics.¹⁰ One salient point from that group's report is that infant feeding must be flexible, and that the needs of infants are best served on an individual basis. The members of the Committee stated that there is no nutritional advantage or disadvantage in the addition of solids prior to 2½ or 3 months of age, but they recommended that iron-containing solid foods should be introduced during the third month. They found that at present there is no evidence of an increased incidence of allergy in infants who are fed solid foods early, and they made the recommendation that a vitamin supplement containing a minimum of 400 units of vitamin D and 30 mg. of ascorbic acid be administered daily to infants. They found no evidence of any psychological advantage to the child from early solid feedings.

CONCLUSION

We must conclude, therefore, that infant feeding methods are in a state of flux. Types and technics of infant feeding have run the gamut, and the "modern feeding methods" of today may be obsolete five years from now. Nevertheless, infants will survive the vagaries of the medical profession, and with additional scientific knowledge and common sense, we may achieve even better nutrition in infants than we have today.

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SALES TALK ON PREVENTIVE MEDICINE

A realization of the value of preventive medicine has never been easy to sell. More people than ever before are aware of it, but lip-service and action are two different things. Too many of them still wait until illness hits before going to see their doctor.

In their talks with patients, physicians can do a job selling preventive medicine, if they will take time to do so.

Perhaps doctors might start promoting the idea that one of the responsibilities of a housewife and mother is to maintain a health record for each of the members of her family, and they might provide women with charts to use for that purpose. There, along with other details of each individual's medical history, the mother could be encouraged to record the dates of his or her inoculations and physical and dental check-ups.

Immediate results might not be apparent, but over the years prevention might save the price of a new car or a substantial down-payment on a house. Besides, regular visits to a physician or dentist while a child is healthy tend to reduce his anxiety on subsequent occasions.

A fitting slogan for such a program might be something on this order: "See your doctor when you're well, and only see him once. If you wait until you're ill, you'll be going back for months."

Prenatal Tests for Erythroblastosis Fetalis Caused by the Rh Factor

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ONE OF THE PROBLEMS about erythroblastosis fetalis that remains unsolved is that of foretelling whether or not a baby will have the disease. If a reliable method for such a prediction could be discovered, preparations could be made for giving exchange transfusions immediately after birth, and some stillbirths could probably be prevented by early inductions of labor.

In this study, I shall compare the results of prenatal tests with the conditions of the babies subsequently born. I shall approach the problem in two ways. First, I shall summarize all of the cases of erythroblastosis fetalis resulting from Rh-factor incompatibility seen at Raymond Blank Memorial Hospital, Des Moines, during the 12 months between July 1, 1956, and June 30, 1957. Second, I shall show whether or not the babies born to a series of 89 Rh-negative women had erythroblastosis. Albumin antibody titers were done on that series of mothers on approximately the dates of their delivery at Iowa Methodist Hospital, Des Moines.

THIRTY-FIVE CASES

Table 1 summarizes the 35 cases of erythroblastosis fetalis seen at Raymond Blank Memorial Hospital between July 1, 1956, and June 30, 1957. The patients are arranged alphabetically. The table shows: (1) the number of previous pregnancies the mother had had; (2) the number of transfusions the mother received; (3) whether or not the mother's Rh status was determined correctly before delivery; (4) the results of incomplete antibody titers when obtainable; (5) the results of the baby's first Coombs test; (6) the baby's approximate birth weight; (7) the baby's age at the time of its first transfusion; (8) the number of transfusions required; and (9) the condition of the baby during the neonatal period.

The mother of the twins D.L. and D.L. had had no previous pregnancy, known transfusion or injection of blood. This history was probed carefully by the patient's physician, and he satisfied himself that it was accurate. The Rh factors of five of the mothers had not been correctly determined before delivery, and the errors were especially significant in the cases of R.E., K.T., and

K.R., the only fatalities among these 35 babies. Since the mothers of these babies who died had not been known to be Rh negative at the time of delivery, the diagnosis of erythroblastosis was not suspected until the disease had progressed so far that its effects were irreversible. Prenatal titers for incomplete antibody were done on four mothers, and they were all elevated before delivery.

The first Coombs tests done on six of these 35 babies were interpreted as negative, but subsequent Coombs tests were positive. The baby's approximate birth weight gives an indication of its maturity. Edema contributed to the weight in some instances. J.M. was the only one whose weight was less than 2,500 Gm. This baby was born spontaneously at 37 weeks' gestation and did well after two exchange transfusions. E.P. and L.S. were the only two whose births were induced prematurely. E.P.'s mother had had two previous pregnancies and both had resulted in stillbirths. When this baby's fetal heart tones became irregular and induction of labor failed, a cesarean section was done at 38 weeks' gestation. The baby appeared clinically immature, although the birth weight was 6 lbs. 4 oz. L.S. was induced at 37 weeks' gestation because of a rising blocking antibody titer. However, this baby weighed 8 lbs. 8 oz. and had no clinical evidence of edema. Both E.P. and L.S. required only one exchange transfusion each.

All of those babies whose mothers' Rh was known before delivery survived the neonatal period with no signs of kernicterus. Three of the five whose mothers' Rh was not known before delivery died. Two had kernicterus, and one had severe anemia. *Therefore, from this study of patients seen in one year at Raymond Blank Memorial Hospital, we can conclude that the most important procedure in reducing the mortality rate from erythroblastosis fetalis would be the performance of accurate Rh tests on all pregnant women.*

It should be recognized that the performance of tests for the Rh factor is not a simple routine procedure. Allen and Diamond¹ have pointed out that today, with strong testing serum, false positive results are more common than false negative ones. Therefore, one should never assume that a previous test was correct, and Rh tests should be rechecked during each pregnancy in a reliable laboratory by persons trained to do serologic testing.

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TABLE 1
35 CASES OF ERYTHROBLASTOSIS CAUSED BY Rh FACTOR INCOMPATIBILITY
(July 1, 1956-June 30, 1957)

Patient	(1) Number of Known Pregnancies	(2) Number of Known Trans- fusions	(3) Mother's Rh Known	(4) Mother's Incomplete Antibody Titer	(5) Results of Baby's First Coombs Test	(6) Appropri- mate Birth Weight	(7) Age at Time of First Trans- fusion	(8) Number of Exchange Trans- fusions	(9) Results in Neonatal Period
M. A.	3	0	Yes	9th Mo. 1:32 (B)	Positive	6 lbs.	8 hrs.	2	Good
B. B.	2 (1 treated for E.F.)	0	Yes		Positive	8 lbs.	10 hrs.	3	Good
W. B.	3 (1 died with E.F.)	0	Yes	5th Mo. 1:8 (B) 9th Mo. 1:64 (B)	Negative	7 lbs.	5 hrs.	2	Good
D. C.	2	0	Yes		Positive	9 lbs.	15 hrs.	1	Good
D. C.	3	0	Yes		Positive	7 lbs.	28 hrs.	2	Good
C. D.	4 (1 treated for E.F.)	0	Yes		Positive	7 lbs.	6 hrs.	2	Good
R. E.	4	0	No		Positive	8 lbs.		0	D.O.A. at 4-days
A. G.	4	0	Yes		Positive	7 lbs.	14 hrs.	2	Good
M. G.	2	0	Yes		Positive	9 lbs.	14 hrs.	1	Good
S. G.	5 (2 Miscar- riages)	1	No		Positive	8 lbs.	7 hrs.	2 Exchange 1 Simple	Good
S. H.	2	0	Yes		Positive	6 lbs.	3 hrs.	2 Exchange 1 Simple	Good
B. L.	6	0	Yes		Positive	6 lbs.	16 hrs.	1	Good
D. L.	0	0	Yes		Positive	6 lbs.	5½ hrs.	2	Good
(Twins)									
D. L.	0	0	Yes		Positive	6 lbs.	7 hrs.	3	Good
C. M.	4 (1 treated for E.F.)	0	Yes		Positive	7 lbs.			Good
J. M.	2	0	Yes	4th Mo. Neg. (B) 8th Mo. 1:8 (B)	Positive	4¾ lbs.	2½ hrs.	2	Good
D. N.	3	0	Yes		Positive	6 lbs.	9 hrs.	1	Good
M. O.	4	0	No		Positive	8 lbs.		0	Good
E. P.	3 (2 Stillbirths)	0	Yes		Positive	6 lbs. (C. Section at 38 wks.)	2 hrs.	1	Good
D. P.	3 (1 with E.F.)	0	Yes		Negative	8 lbs.	16 hrs.	1	Good
T. Q.	5	0	Yes		Positive	9 lbs.	5 hrs.	1	Good
D. R.	2	0	Yes		Positive	7 lbs.	4½ hrs.	1	Good
K. R.	4 (1 Stillbirth)	0	No		Positive	7 lbs.	9 days—Moribund on admission. Died after simple trans- fusion.		
S. R.	3	0	Yes		Positive	Not Known	1 hr.	2	Good
P. R.	3	0	Yes		Negative	8 lbs.	42 hrs.	1	Good
B. S.	4	0	Yes		Positive	7 lbs.		0	Good
D. S.	2	0	Yes		Positive	7 lbs.	14 hrs.	2 Exchange 1 Simple	Good
L. S.	3	0	Yes	7th Mo. Neg. (B) 9th Mo. 1:128 (B)	Negative	9 lbs.	2¼ hrs.	1	Good Induced at 37 wks.
M. S.	3	0	Yes		Positive	7 lbs.	8½ hrs.	1	Good
K. T.	5 (1 baby died shortly after birth)	0	No		Positive	7 lbs.	2 days	1 Exchange	Died 2 hrs. after ad- mission
R. T.	4	0	Yes		Negative	7 lbs.	11 hrs.	1 Exchange 1 Simple	Good
B. W.	?	0	Yes		Positive	7 lbs.	4½ hrs.	1	Good
D. W.	11 (2 pr. twins stillborn and died in neo- natal period)	0	Yes		Negative	6 lbs.		0	Good
T. W.	2	0	Yes		Positive	8 lbs.	9 hrs.	3	Good
K. Y.	2	0	Yes		Positive	Not Known	2 hrs.	1 Exchange 1 Simple	Good

Since the first Coombs tests done on six of the 35 babies were reported negative, it is apparent that if the first Coombs test is negative and erythroblastosis is suspected, the test should be repeated. However, if the baby's indirect bilirubin threatens to reach 20 mg./100 cc. in the first week of life, an exchange transfusion to prevent kernicterus is indicated, even though the diagnosis of erythroblastosis has not been established.

Another confusing possibility is that a baby with erythroblastosis may be typed as Rh negative. This may happen when the baby's red blood cells are so heavily coated with Rh antibody that they do not react to Rh typing serum. These babies are really Rh positive and will eventually have positive tests.

Many times, it seems that fewer transfusions are necessary when the first exchange has been performed a few hours after birth. However, the figures in columns 7 and 8 in Table 1 show that 3 out of 5 babies transfused as early as 1-3 hours after birth required two exchange transfusions, and 5 out of 7 babies transfused as late as 11-16 hours after birth required only one transfusion each. *Thus, the number of transfusions necessary probably depends upon the severity of the disease.*

GOOD RESULTS FROM EXCHANGE TRANSFUSIONS

The treatment of erythroblastosis fetalis by exchange and simple transfusions yields very good results. The first exchange transfusion for probable erythroblastosis was reported by Hart² in 1925. It was performed on the eighth baby born in a family where six previous infants had died from "familial icterus gravis" during the neonatal period. The surviving second child had had severe jaundice in the neonatal period, but was considered normal at the age of 12, except for "chorea." Hart thought that the jaundice was caused by a circulating toxin, and performed an exchange transfusion on the second day of the eighth baby's life by injecting 335 cu. cm. of blood into a saphenous cut-down, at the same time that 300 cu. cm. of blood was being withdrawn from the anterior fontanelle. In 1948, he reported that this patient was then a normal man.³

Exchange transfusion as a specific treatment for erythroblastosis was introduced in 1946.⁴ Since then, the procedure has been modified many times, until now each pediatric center has its own technic for doing exchange transfusions. The exchange is usually done by alternately injecting and withdrawing blood through the umbilical vein. Even though each pediatric center may have its own technics and indications for treatment, the results in all centers are almost uniformly good. *Currently, the mortality rate of erythroblastosis in liveborn infants is estimated to be between two and five per cent in most pediatric centers.*^{7, 8}

It is widely accepted that the use of exchange transfusions to keep the serum indirect bilirubin

under 20 mg. will practically always prevent kernicterus in a full-term infant. Deaths from overwhelming anemia can also usually be prevented through the use of exchange and simple transfusions. In a series of 280 exchange transfusions done by experienced personnel, Boggs⁹ reports that the mortality rate from an exchange transfusion was about 1.4 per cent. Thus, there is no reason to hesitate about doing an exchange transfusion whenever it is indicated, and the treatment of early-recognized erythroblastosis in a live-born infant is no longer a serious problem.

However, some erythroblastotic babies who are not treated during the first few hours of life will die or have kernicterus regardless of how vigorously they are treated later. Boggs⁹ reported 97 per cent good results in 167 full-term infants seen before 12 hours of age, and 88 per cent good results in 59 full-term babies treated after 12 hours of age. Edith Potter¹⁰ has shown that the mortality rate in live-born erythroblastotic babies has progressively decreased, but the percentage of stillbirths has remained about 22 to 25 per cent. Thus, these studies emphasize two big problems that remain to be solved: (1) Which patients should be put to the additional expense and inconvenience of delivery in a hospital where an exchange transfusion can be started immediately after birth, if necessary? and (2) Which patients, if any, should be induced before term in order to prevent stillbirths?

PREDICTION OF ERYTHROBLASTOSIS

Numerous studies have been done on the relationship of maternal Rh antibody titers to erythroblastosis in an attempt to predict the severity of erythroblastosis. Wiener, Nappi and Gordon¹¹ have shown that in a series of 205 babies born to mothers with elevated albumin titers, the total mortality was 12 per cent when the titer was four units or less, and 72 per cent when the titer ranged from 65 to 256 units. Kelsall, Vos, Kirk and Shield¹² have shown that a maternal indirect antiglobulin titer over 1:512 is associated with a higher infant mortality rate. However, these workers agree that there may be striking exceptions in that a baby only mildly affected may be born when the titer has been high, and a severely affected baby may be born even though the titer has been low.

A series of albumin titers done on 89 Rh negative women at the Iowa Methodist Hospital laboratory during the years 1955 and 1956 serve as a base line for the second part of this study. The blood for titers was drawn at approximately the times of delivery. In 29 instances, the pregnancies resulted in babies with evidence of erythroblastosis. The other 60 titers were done at random on Rh negative women whose babies had no signs or symptoms of erythroblastosis fetalis.

MOTHERS WITH NEGATIVE TITERS

Of the 89 women in this series, 35 had negative albumin titers. None of the babies born to those 35 had erythroblastosis. Since the time when these titers were done, there have been eight reported pregnancies in this group. All subsequent titers have been negative, and no babies have had erythroblastosis.

MOTHERS WITH ELEVATED TITERS

Of the 54 women who had elevated titers, 29 or 54 per cent had babies with established erythroblastosis. The 25 mothers whose babies did not have erythroblastosis had had previous pregnancies which could explain their elevated titers. I have divided the mothers of babies with erythroblastosis into three groups on the basis of the severity of the disease in their infants. The "severe" group includes those whose stillborn infants were proved to have had erythroblastosis, and the others whose babies' clinical conditions were considered critical because of erythroblastosis. The "moderate" group includes the mothers of babies who required exchange transfusions but whose clinical conditions were never considered critical. The "mild" group includes the mothers of infants who had erythroblastosis but required no exchange transfusions. In some cases the hemolytic process was so mild that jaundice was not recognized clinically. In Tables 2, 3 and 4, the obstetrical histories of the mothers are arranged in order of decreasing albumin titers done on approximately the date of delivery. The results of these base line tests are italicized. Results of additional tests for incomplete antibody are indicated in some instances. The reader must remember that no valid comparison can be made between different types of tests and tests done at different laboratories.

SEVERE ERYTHROBLASTOSIS

Nine mothers had babies with severe erythroblastosis (Table 2). Five of these mothers had albumin titers of 1:32, one had a titer of 1:8 and three had titers of 1:4 on the base line tests. Thus, all had elevated titers, but there is no uniformity in the degree to which the titer was elevated. All nine of these women have obstetrical histories which could explain the source of their sensitization.

In this group of nine mothers having babies with severe erythroblastosis, there were a total of 46 pregnancies, or an average of 5.1 pregnancies per mother. There were nine stillbirths and four neonatal deaths. A total of 14 normal children, or an average of 1.6 per mother, had been born before the first erythroblastotic baby was delivered. However, we know that M.E.P.'s first husband was Rh negative, and thus there was no possibility of her first three children's having erythroblastosis. J.K.'s first husband may also have been Rh negative. If we consider only the normal children born to women whose husbands

were known Rh positives, there would then be an average of only 1.0 normal child per family born before an erythroblastotic baby was delivered. None of the families had a subsequent Rh-positive baby without erythroblastosis. In eight families, the first baby known to have erythroblastosis was either a stillbirth or a severely diseased infant. Only in the case of L.M. was there a gradual progression of the severity of the disease in subsequent babies.

In two pregnancies shown in Table 2, the titer was confusing. In L.M.'s 1951 pregnancy, there was a consistent depression of the albumin antibody titer from 1:32 in the second month of pregnancy to 1:2 two weeks before delivery. However, the baby was Rh positive and Coombs positive, and was given two simple transfusions for anemia. In P.B.'s 1955 pregnancy, the Coombs titer showed a rise from 1:8 in the third month of pregnancy to 1:32 one week before delivery. She had a past history of one stillbirth and one neonatal death. Induction at 37 weeks resulted in the delivery of a normal Rh-negative baby with a negative Coombs test. Other than in these two pregnancies, the titers shown on Table 2 showed an elevation when the baby had erythroblastosis.

MODERATE ERYTHROBLASTOSIS

Sixteen mothers had babies with moderate erythroblastosis (Table 3). All of them also had some elevation of titer, but again there was no uniformity in the elevation of the titer. Albumin titers done approximately on the date of delivery were 1:128 for one mother, 1:64 for two mothers, 1:32 for four mothers, 1:8 for one mother, 1:4 for five mothers, 1:2 for two mothers and 1:1 for one mother. In all cases there were histories of previous pregnancies or transfusions that could explain the maternal sensitization.

In this group of 16 mothers who had babies with moderate erythroblastosis, there were 52 pregnancies, or an average of 3.3 pregnancies per mother. There were two stillbirths (twins), and no neonatal deaths. The stillborn twins were autopsied, and no evidence of erythroblastosis was found. In all, there were 24 normal children, or an average of 1.5 per mother, who had been born before a baby with erythroblastosis fetal. However, if we omitted D.M., who was sensitized by transfusion, there would be an average of 1.6 normal babies born before an erythroblastotic infant. Only two patients had more than one baby with erythroblastosis, and these babies had similarly moderate cases. No patients had any subsequent Rh-positive babies without erythroblastosis.

All of the babies with moderate erythroblastosis required at least one transfusion, except P.B.'s infant, and if that baby had been seen earlier than the fourth day of life, he almost certainly would have been given an exchange transfusion, since his bilirubin was over 20 mg. D.'s baby was the only one in this group who required three ex-

TABLE 2
SEVERE ERYTHROBLASTOSIS—9 MOTHERS

<i>Rh Neg. Mother</i>	<i>No. of Known Transfusions</i>	<i>No. of Known Pregnancies</i>	<i>Approximate Dates of Delivery</i>	<i>Condition of Baby</i>	<i>Date of Titer</i>	<i>Incomplete Antibody Titer</i>
A. P.	0	2	1st, 1943 2nd, 4/25/56	Retarded, Etiology? Severe E.F. with 3 exchanges	4/25/56	1:32 (A)
J. K.	0	5 2 by 1st Husb. 3 by 2nd Husb.	1st ? 2nd ? 3rd ? 4th ? 5th, 2/2/56	Normal Normal Baby jaundiced, no treatment Severe E.F. with 2 exchanges, Died at 2 days	2/2/56	1:32 (A)
L. M.	1 (1947)	6	1st, 1946 2nd, 1947 3rd, 6/16/49 4th, 4/24/51 5th, 9/15/53 6th, 2/28/56	Stillbirth at 7 mos. Ectopic pregnancy Mild E.F. Mild E.F., Transfused at 2 and 5 Wks. Rh Neg. Severe E.F. with 3 exchanges	3/17/49 6/22/49 (P.P.) 9/26/50 11/7/50 3/13/51 4/11/51 4/11/53 8/13/53 9/19/55 2/25/56 3/5/56 (P.P.)	1:2 (B) 1:16 (B) 1:32 (A) 1:16 (A) 1:8 (A) 1:2 (A) 1:16 (B) 1:16 (B) 1:1 (B) 1:32 (A) 1:16 (A)
M. E. P. cde/cde	1 (1953)	3 by 1st Husb. Rh Neg. 4 by 2nd Husb. Rh Pos., cDE/ cde (Rsr)	1st, 1940 2nd, 1945 3rd, 1947 4th, 1953 5th, 1954 6th, 2/8/56 7th, 8/13/57	Rh Neg. Rh Neg. Rh Neg. Term stillbirth, toxemia Stillbirth at 36 Wks., toxemia Induced at 38 Wks., E.F. with 2 ex- changes, Normal at 1½ Yrs. Stillbirth with E.F. at 36 Wks.	8/19/54 12/13/55 1/6/56 1/17/56 2/8/56	1:64* 1:128* 1:16 (A) 1:32 (A) 1:32 (A)
P. B.	0	5	1st, 1947 2nd, 1948 3rd, 1949 4th, 1951 5th, 7/6/55	Normal Ectopic pregnancy Stillbirth with E.F. Full term, Lived 10 Min. Induced at 37 Wks. Rh Neg., Coombs Neg.	1/7/55 2/3/55 6/2/55 6/29/55 7/6/55	1:8 (C) 1:16 (C) 1:32 (C) 1:32 (C) 1:16 (A)
O. S.	0	5	1st, 1938 2nd, 1941 3rd, 1945 4th, 1948 5th, 11/22/55	Normal Transfused for anemia Stillbirth Stillbirth—Hydrops. E.F. with 1 exchange	11/14/55 11/21/55	1:64 (C) 1:8 (A)
A. R.	0	8	1st ? 2nd ? 3rd, 1946 4th, 1949 5th, 1950 ? 6th, 1952 7th, 11/12/55 8th, 3/23/57	Normal Normal Normal Normal Miscarriage at 6 Wks., D & C Baby jaundiced, No treatment Severe E.F. with 2 exchanges Severe E.F., Hydrops. Lived 44 Min.	10/19/55 11/12/55 2/14/57	1:512 (C) 1:4 (A) 1:1024 (C)
D.	0	4	1st ? 2nd ? 3rd ? 4th, 12/12/55	Normal Normal Normal Severe E.F. with 2 exchanges	12/12/55	1:4 (A)
J. H.	0	4	1st, 1953 2nd, 1954 3rd, 11/16/55 4th, After 12/15/56	Normal Stillbirth Induced at 36 Wks., Severe E.F. with 2 exchanges, Died at 2 Days Stillbirth	8/20/55 10/22/55 11/16/55 9/12/56 12/15/56	1:32 (B) 1:128 (B) 1:4 (A) 1:64 (B) 1:32 (B)

* Albumin titer not done at Iowa Methodist Laboratory.

(A) Albumin titer done at Iowa Methodist Hospital Laboratory.

(B) Blocking antibody titer done at another laboratory.

(C) Coombs titer done at another laboratory.

TABLE 3
MODERATE ERYTHROBLASTOSIS—16 MOTHERS

Rh Neg. Mother	No. of Known Transfusions	No. of Known Pregnancies	Approximate Dates of Delivery	Condition of Baby	Date of Titer	Incomplete Antibody Titer
S. R.	1	2	1st, 2/23/54 2nd, 4/17/55	Miscarriage at 4 Mos. E.F. with 1 exchange	12/8/54 3/17/55 4/17/55	1:4 (B) 1:16 (B) 1:128 (A)
P. B.	0	4	1st ? 2nd ? 3rd ? 4th, 4/20/56	Normal Normal Normal E.F., No exchange but bilirubin over 20 when admitted at 4 days	4/28/56	1:64 (A)
P. M.	0	4	1st, 1948 2nd, 1952 3rd, 1953 4th, 3/11/55	Normal Normal Normal E.F. with 2 exchanges	3/11/55	1:64 (A)
R. B.	1 (1953)	3	1st, 1950 2nd, 1953 3rd, 4/14/55	Miscarriage at 3 Mos. Normal E.F. with 1 exchange	3/2/53 8/6/53 10/2/54 4/7/55 4/14/55	Neg. (B) Neg. (B) 1:024 (B) 1:18 (B) 1:32 (A)
D.	0	4	1st, ? 2nd, ? 3rd, ? 4th, 5/23/55	Retarded, Etiology? Simple transfusion for anemia at 3 Wks. E.F. with 1 exchange Twins, both with E.F. and 1 exchange	5/23/55	1:32 (A)
D.	0	4	1st, ? 2nd, ? 3rd, ? 4th, 1/26/55	Normal Normal Normal E.F. with 3 exchanges	1/26/55	1:32 (A)
E. S.	0	3	1st, 1953 2nd, 1954 3rd, 1/11/55	Normal Normal E.F. with 2 exchanges	1/11/55	1:32 (A)
M. B.	0	3	1st, June, 1950 2nd, ? 3rd, 8/13/55	Stillborn twins. Autopsies showed macerated fetuses Normal E.F. with 2 exchanges	8/13/55	1:8 (A)
M. W.	0	5	1st, 1946 2nd, 1948 3rd, 1949 4th, 5/19/53 5th, 10/8/55	Miscarriage at 1 Mo. Normal Normal Normal E.F. with 1 exchange	11/12/52 12/31/52 4/18/55 9/18/55 10/8/55	Neg. (B) Neg. (B) 1:8 (B) 1:8 (B) 1:4 (A)
L. B.	0	3	1st, 1949 2nd, 1952 3rd, 1/14/56	Normal Baby jaundiced, No studies E.F. with 1 exchange	9/10/55 11/29/55 12/28/55 1/14/56	1:2 (B) 1:8 (B) 1:16 (B) 1:4 (A)
C. B.	0	4	1st, 1950 2nd, 1951 3rd, 1953 4th, 7/12/55	Normal Normal E.F. with 2 exchanges E.F. with 2 exchanges	7/6/55 7/12/55	1:8 (B) 1:4 (A)
M. H.	0	3	1st, 1951 2nd ? 3rd, 8/4/55	Normal Miscarriage at 3 Mos. E.F. with 1 exchange	6/15/55 7/20/55 8/3/55 8/4/55	1:4 (C) 1:16 (C) 1:32 (C) 1:4 (A)
W. H.	0	4	1st, 1945 2nd, 1948 ? 3rd, 1953 4th, 4/4/55	Normal E.F. with 1 exchange Normal Rh Neg., Coombs Neg.	4/4/55	1:4 (A)
D. M.	1 (about 1935)	1	1st, 2/16/55	E.F. with 2 exchanges	2/16/55	1:2 (A)
D. G.	0	3	1st, 1952 2nd, 1953 3rd, 2/1/55	Normal Miscarriage at 2 Mos. E.F. with 2 exchanges	10/19/54 1/29/55 2/1/55	Neg.* Neg.* 1:2 (A)
B. W.	0	2	1st, 1953 2nd, 12/9/54	Normal E.F. with 1 exchange	11/5/54 12/9/54	1:64, 1:4* 1:1 (A)

* Type of titer not indicated.
(A) Albumin titer done at Iowa Methodist Hospital Laboratory.
(B) Blocking antibody titer done at another laboratory.
(C) Coombs titer done at another laboratory.

change transfusions. He is included in this group because his jaundice responded typically to exchange transfusion and his clinical condition was never considered critical.

MILD ERYTHROBLASTOSIS

There were four mothers whose babies had mild erythroblastosis (Table 4). All of these women also had some elevation of incomplete antibody titer, and again there was no uniformity in the elevations of the titers. At the time of delivery, one mother had an albumin titer of 1:128, two had titers of 1:32, and one had a titer of 1:16. In all cases there were histories of previous pregnancies or transfusions to explain the maternal sensitization.

In this group of four mothers of babies with mild erythroblastosis, there were 11 pregnancies, or an average of 2.8 pregnancies per mother. There were no stillbirths and no neonatal deaths. There were five apparently normal children, or an average of 1.3, born to these women before the birth of the baby with mild erythroblastosis. However, if the mother who had been sensitized by transfusion is omitted, one will find an average of 1.7 normal babies per mother before the baby with mild erythroblastosis was born. None of these women had other children with erythroblastosis. None of the babies in this classification were given any exchange transfusions. In most cases the hemolytic process was so mild that erythroblastosis probably would not have been suspected if routine Rh and Coombs tests had not been done on the cord blood.

ERYTHROBLASTOSIS NOT PROVED

In addition to the 29 mothers with elevated titers whose babies developed erythroblastosis fetalis, there were 25 with elevated titers whose babies were not proved to have had erythroblastosis and who had no histories of having had either a previously diseased baby or a transfusion. These cases are summarized in Table 5, entitled "No

Established Erythroblastosis Fetalis." One of these mothers had a titer of 1:32, two had titers of 1:16, four had titers of 1:8, three had titers of 1:4, four had titers of 1:2 and 11 had titers of 1:1. The first mother, P.S., had a history very suggestive of the severe type of erythroblastosis in that her second and third pregnancies had resulted in stillbirths. However, an autopsy on the second stillbirth did not prove the presence of erythroblastosis. Fifteen of the mothers had titers of 1:1 or 1:2, which are not significant elevations. All of the other patients listed in Table 5 except L.C. have obstetrical histories which offer a possible explanation for the elevations of their antibody titers. L.C., however, had a titer of 1:8 at the time of delivery of her first baby, but the infant was Rh-negative and Coombs-negative.

SENSITIZATION

The Rh antibody does not occur naturally and is rarely found except in association with a previous pregnancy or transfusion. However, several cases of erythroblastosis fetalis caused by Rh-factor incompatibility have been reported in a first pregnancy with no history of transfusion. Hartmann and Brendomoen¹⁵ report that of 520 "D" negative women who had elevated Rh-antibody titers in routine prenatal studies, 23 (4 per cent) were women in their first pregnancies who gave no histories of transfusion. Three of these women had stillbirths with erythroblastosis, and four had babies who required treatment for erythroblastosis. Anderson¹⁶ and Spalding¹⁷ have reported carefully investigated cases of sensitization in primagravidas with no histories of transfusion. These occasional cases, and the cases of the twins D.L. and D.L. (Table 1) who required early exchange transfusions, point up the necessity for awareness of the possibility of erythroblastosis due to Rh-factor incompatibility in a first-born infant, even when the mother has given no history of transfusion. Whether or not the mother may have had an unknown pregnancy or trans-

TABLE 4
MILD ERYTHROBLASTOSIS—4 MOTHERS

Rh Neg. Mother	No. of Known Transfusions	No. of Known Pregnancies	Approximate Dates of Delivery	Condition of Baby	Date of Titer	Incomplete Antibody Titer
D. O.	0	5	1st, 1944 2nd, 1945 3rd, 1950 4th, 1953 5th, 6/19/55	Normal Normal ? Jaundice, No treatment Ectopic pregnancy Rh Pos., Coombs Pos., No clinical jaundice	6/5/55 6/19/55	Neg. 1:128 (A)
P. S.	0	3	1st ? 2nd ? 3rd, 6/22/55	Normal Normal Rh Pos., Coombs slightly Pos., Not jaundiced	6/15/55 6/22/55	1:256 (B) 1:32 (A)
H. P.	0	2	1st, 1953 2nd, 4/16/56	Normal Mild E.F., no exchanges	4/17/56	1:32 (A)
L. B. (About 1949)	1	1	1st, 7/16/55	Mild E.F., no exchanges	7/16/55	1:16 (A)

TABLE 5
NO ESTABLISHED ERYTHROBLASTOSIS FETALIS—25

<i>Rh Neg. Mother</i>	<i>No. of Known Transfusions</i>	<i>No. of Known Pregnancies</i>	<i>Approximate Dates of Delivery</i>	<i>Condition of Baby</i>	<i>Date of Titer</i>	<i>Incomplete Antibody Titer</i>
P. S.	0	3	1st ? 2nd ? 3rd, 12/21/55	Normal Stillbirth at term Stillbirth at 6 Mos., Macerated Autopsied but no proof of E.F.	12/21/55	1:32 (A)
N. A.	0	4	1st ? 2nd ? 3rd ? 4th, 7/22/55	Normal Miscarriage at 2 Mos. Miscarriage at 2 Mos. Rh Neg.	7/22/55	1:16 (A)
N. W.	0	6	1st, 1947 2nd, 1948 3rd, 1949 4th, 1953 5th	Normal Stillbirth Miscarriage at 2 Mos. Normal Miscarriage		
B. C.	0	2	6th, 1/4/56 1st, 1952	Normal, No studies Normal	1/4/56 4/20/56	1:16 (A) Neg.*
L. G.	?	3	2nd, 4/30/56 1st 2nd	Rh Neg., Coombs Neg. Normal Normal	4/30/56	1:8 (A)
L. C.	0	1	3rd, 3/27/55 7/26/55	Normal, No studies Rh Neg., Coombs Neg.	3/27/55 7/26/55	1:8 (A) 1:8 (A)
V. S.	0	4	1st, 1949 2nd, 1951 3rd, 1953 4th, 10/23/55	Normal Stillbirth at 6 Mos. Normal Normal, Rh Neg., Coombs Neg.		
K. S.	0	2	1st, 1953 2nd, 6/21/55	Normal Rh Pos., Coombs Neg.	6/21/55	1:8 (A) 1:4 (A)
C. M.	3	5	1st, 1939 2nd, 1943 3rd, 1947 4th, 1952 5th, 4/19/55	Normal Normal Normal Miscarriage and D & C Rh Neg.		
E. M.	0	3	1st, 1950 2nd, 2/18/56 3rd, 10/19/57	Normal Rh Neg., Coombs Neg. Normal	2/2/55 4/1/55 4/19/55	Neg. Neg. 1:4 (A)
H. W.	0	2	1st, 1952 2nd, 3/16/55	Normal Rh Pos., Coombs Neg.	12/27/55 9/11/57	1:4 (A) Neg. (A)
R. D.	1 (1951)	4	1st, 1951 2nd, 1952 3rd, 1954 4th, 7/8/55	Miscarriage at 6 wks. Normal Normal Rh Pos., Coombs Neg.	3/16/55 2/8/54 4/27/55 7/7/55 7/8/55	1:2 (A) Neg. Neg. Neg. 1:2 (A)
E. B.	0	6	1st, 1945 2nd, 1947 3rd, 1948 4th, 1953 5th, 11/15/54 6th, 12/21/55	Normal Miscarriage at 4 Mos. Normal Normal Normal Rh Neg., Coombs Neg.	12/21/55	1:2 (A)
C. S.	0	3	1st, 1948 2nd, 1954 3rd, 5/14/56	Normal Normal Rh Pos., Coombs Neg.	5/14/56	1:2 (A)
J. T.	0	3	1st ? 2nd ? 3rd, 5/5/55	Normal Normal Rh Pos., Coombs Neg.	5/5/55	1:1 (A)
D. B.	0	3	1st ? 2nd ? 3rd, 12/5/54	Normal Normal Rh Neg., Coombs Neg.	12/5/54	1:1 (A)
N. B.	0	2	1st, 1950 2nd, 12/2/55	Normal Rh Pos., Coombs Neg.	4/29/55 10/13/55 11/24/55 12/2/55	Neg. (B) Neg. (B) 1:8 (B) 1:1 (A)
L. E. M.	?	2	1st, 1947 2nd, 2/22/56	Ectopic pregnancy Normal, No studies	2/13/56	1:1 (A)
B. E.	0	5	1st 2nd 3rd 4th, 1950 5th, 3/15/55	Miscarriage Miscarriage Miscarriage Rh Pos., Coombs Neg. Rh Pos., Coombs Neg.	3/15/55	1:1 (A)
P. L.	0	3	1st, 12/8/54 2nd, 1/26/56 3rd, 2/21/57	Rh Pos., Coombs Neg. Normal Normal	12/8/54	1:1 (A)
M. V.	0	5	1st, 1949 2nd, 1950 3rd, 1951 4th, 1953 5th, 2/11/56	Miscarriage at 4½ Mos. Normal Normal Normal Rh Pos., Coombs Neg.	2/4/56 2/11/56	Neg. (C) 1:1 (A)
H. W.	0	2	1st ? 2nd, 2/7/55	Normal Rh Pos., Coombs Neg.	2/7/55	1:1 (A)
J. J.	0	4	1st, 1947 2nd, 1952 3rd, 4/23/55 4th, 12/28/57	Normal Premature Miscarriage at 2½ Mos. Normal Normal	4/23/55	1:1 (A)
B. K.	1 (1948)	3	1st, 1950 2nd, 6/19/55 3rd, 6/2/57	Normal Rh Pos., Coombs Neg. Normal	12/1/54 6/19/55 11/13/56 5/7/57	Neg. (B) 1:1 (A) Neg. (B) Neg. (B)
H. K.	0	4	1st ? 2nd ? 3rd ? 4th, 2/13/56	Normal Normal Normal Rh Neg. Twins	2/3/56 2/13/56 3/20/56	Neg.* 1:1 (A) Neg. (A)

(A) Albumin titer done at Iowa Methodist Hospital Laboratory.
(B) Blocking antibody titer done at another laboratory.

(C) Coombs titer done at another laboratory.
* Type of titer not indicated.

fusion certainly doesn't detract from the need for suspicion of erythroblastosis. Also, the fact that a mother may have had several pregnancies with normal Rh-positive infants doesn't preclude the possibility of erythroblastosis in any given pregnancy. One should note that D.W. (Table 1) had had 10 pregnancies before delivering a baby shown to have erythroblastosis. The time interval from sensitization to pregnancy has been shown to have no effect on the possibility of erythroblastosis in the baby. For example, D.M. (Table 3) had had a transfusion about 20 years before her first baby was born, and that infant had moderate erythroblastosis.

SEVERITY OF ERYTHROBLASTOSIS

There are some characteristic features about the family histories of women whose babies have severe erythroblastosis—characteristics which distinguish them from women whose babies have less-severe cases. Edith Potter¹⁰ and Davies, Gerrard and Waterhouse¹³ have shown that the diseased baby occurs earlier in families with severe erythroblastosis. In the group shown in Table 2 there had been an average of only 1.0 normal child born before the severe erythroblast was delivered when the father was known to be Rh positive, whereas in the other groups an average of 1.6 and 1.7 normal babies had preceded the erythroblastotic infant.

Once a woman has had a stillbirth due to erythroblastosis or has delivered a severely diseased living baby, it is rare for her to have an Rh-positive baby who is neither stillborn nor severely diseased. After a stillbirth, according to Murray and Walker,¹⁴ the chances are four out of five that any other Rh-positive baby will be stillborn. Edith Potter¹⁰ reports that the overall survival rate after a stillbirth is only 10 per cent, whereas if the first erythroblastotic infant has survived, the chances that the next baby will live are at least 50-50, and the likelihood will become much greater as more and more babies are treated shortly after birth. Table 2 shows that after a mother had a stillbirth with erythroblastosis, there were only two surviving Rh-positive babies out of eight pregnancies. One of the survivors had been induced at 38 weeks' gestation.

If a woman bears a baby with mild erythroblastosis, the prognosis for subsequent babies with erythroblastosis is much better than if she were to have had a baby with moderate or severe erythroblastosis. Murray and Walker¹⁴ concluded from a study of 1,336 babies with erythroblastosis that if a baby is mildly diseased, the risk of stillbirth in a subsequent erythroblastotic baby is no more than two per cent, and, of those born alive, 60 per cent of the babies will survive without treatment. However, according to these figures, 40 per cent will require treatment, and therefore one cannot overlook the need for exchange trans-

fusion in some babies born after a mild erythroblast. In their attempt to have living children, women who have recurrent stillbirths and babies dying in the neonatal period have more pregnancies than do women who have surviving infants. The severity of the disease cannot be explained on the basis of repeated pregnancy, for the first affected infant occurs so early in the obstetrical history, but there must be something about the disease which makes it more severe in certain families than in others.

Several factors which might contribute to the severity of erythroblastosis have been suggested. In 1946, Wiener²⁰ postulated that a recessive genetic factor might determine which Rh-negative women would become most easily sensitized to the Rh factor. However, the fact that 90 per cent of the Rh-negative individuals can be sensitized by transfusion with Rh-positive blood rules out the possibility that a recessive factor could have any effect on the sensitivity. Others have speculated that a woman with an allergic tendency might be sensitized more readily, but attempts to prove this hypothesis have been inconclusive. It was once suggested that there may be a genetic factor determining placental permeability of the Rh antibody, but this theory has now been discarded. Pickles⁴ suggested in 1949 that there might be some genetic factor contributed by the father which would affect the severity of the disease in the offspring. She suggested this on the basis of reports of brothers and cousins fathering babies with similarly severe hemolytic disease to a greater degree than would be expected on the basis of chance alone. Recently, Murray⁸ has determined the genotypes of 540 fathers of babies with erythroblastosis using the five available antisera C, D, E, c and e. He reports that the genotype cDE or R₂ was found significantly more often in fathers of affected babies (41 per cent) than in the general Rh-positive population (34 per cent), and furthermore that with this genotype the risk of the first erythroblastotic baby's being a stillbirth or a severely diseased infant was increased. On the basis of these findings, Murray suggests that when the husband of an immunized woman has the genotype R₁R₂ (CDe/cDE) or R₂R₂ (cDE/cDE), the baby should be born in a hospital where an immediate exchange transfusion could be performed if necessary, even though the family has had no previous diseased babies. Exchange transfusions are equally effective in preventing death and kernicterus in babies of the genotype R₂r (cDE/cde) so that if treatment is started immediately after birth, the results probably will be as good as in other live-born babies with erythroblastosis.

PREMATURE INDUCTION OF LABOR

Induction of labor before term to prevent stillbirth is once again being considered as a possible

routine procedure. Mollison,²⁴ in 1952, reported that the overall mortality rate was higher with routine premature induction because of the increased risk of prematurity. Boggs⁹ reported, in 1957, that a successful result was achieved at the Children's Hospital of Philadelphia, Pennsylvania, in 97 per cent (162 of 167) full-term infants and in 76 per cent (19 of 25) prematures, all babies receiving treatment within 12 hours after birth. Kelsall and others¹² report that they recommend premature inductions after the thirty-sixth week when the maternal indirect antiglobulin titers are 1:512 or over. However, their stillbirth rate was 18 per cent (35 of 194 erythroblastotic babies), which does not differ greatly from the 22 to 25 per cent reported by Edith Potter.¹⁰ Murray⁸ suggests that if the father is R_2R_2 (cDE/cDE), consideration should be given to premature induction, even though there has been no previous diseased baby, since a stillbirth occurs in almost 10 per cent of first affected infants and this risk is nearly three times as great in R_2r (cDE/cde) babies as in R_1r (CDe/cde) babies. Since only about two per cent of the population is of the genotype R_2R_2 , he would recommend very few premature inductions in mothers who have not previously delivered diseased babies.

Thus, the problem of whether or not induction of labor will decrease the total perinatal mortality still remains to be solved. Judgment of individual cases in the light of past history of stillbirths, maternal antibody titer and paternal genotype will be helpful in determining which cases would most likely benefit from early induction. Of these three, the occurrence of previous stillbirth is the most widely-accepted criterion. If the Rh-antibody titer is negative, it is extremely unlikely that the baby will have erythroblastosis. However, if the titer is elevated, it is probable that the baby will have the disease. It is valuable to genotype the father for two reasons. First, if the father is heterozygous for the "D" factor, there is a 50-50 chance that the baby will be Rh negative and consequently couldn't have erythroblastosis. Second, Murray⁸ suggests that the severity of disease in the infant may be anticipated if one knows the genotype of the father.

SUMMARY

In the first part of this paper, I have analyzed the 35 cases of erythroblastosis fetalis caused by Rh-factor incompatibility seen at Raymond Blank Memorial Hospital for Children, in Des Moines, during the 12 months from July 1, 1956, through June 30, 1957. *In this group there were three deaths—all of them babies born to mothers who had not been known to be Rh negative before delivery. The other 32 babies survived with no clinical signs of kernicterus.*

In the second part of this paper, I have divided

erythroblastotics into three groups: "severe," "moderate" and "mild." I have compared the maternal antibody titer with the condition of the baby. No babies with erythroblastosis were born to mothers whose antibody titers were negative. There was an elevated maternal antibody titer in all of the mothers whose babies had erythroblastosis, but there was no correlation between the level of maternal antibody titer and the severity of disease in the infant. Twenty-five multiparous mothers with elevated antibody titers gave birth to normal babies.

Severe erythroblastosis follows a different pattern from that of moderate or mild erythroblastosis. The severe erythroblasts occur earlier in the mothers' obstetrical histories, they are more often stillborn, and the first erythroblast is more likely to be a stillbirth. The genotype of the father may be a significant factor in the severity of disease in the baby.

I have discussed the problem of prevention of stillbirths through early induction. *Three things—a history of previous stillbirths with erythroblastosis, an elevated maternal antibody titer and a father homozygous for the "D" factor and more particularly of the genotype R_2 (cDE)—are useful criteria for determining which patients will most likely benefit from early induction of labor.*

CONCLUSIONS

The most valuable prenatal test in the prevention of death from erythroblastosis is an accurate Rh determination before delivery.

Erythroblastosis may occur in a firstborn infant of a mother with no history of transfusion.

If an Rh-negative woman has a negative Rh-antibody titer, it is extremely unlikely that she will have an erythroblastotic baby. If she has an elevated titer, she may give birth to a baby with erythroblastosis.

The paternal genotype R_2 (cDE) may be a factor in the ease of maternal sensitization and in the severity of disease in the infant.

Premature induction of labor may be of value in the prevention of stillbirths in selected cases.

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Is Coronary Atherosclerosis Preventable?

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PREVENTION OF A disease of unknown etiopathogenesis is theoretically impossible. Coronary atherosclerosis is such a disease. However, the high incidence and prognostic significance of the condition require that consideration be given to possible prophylactic measures, despite the existence of wide gaps in knowledge.

The study of coronary disease is hampered by the fact that there is no reliable method for clinical detection. Symptoms of coronary disease are not reliable evidence, for they occur in only a small percentage of persons who have pathologic evidence of coronary atherosclerosis. The extent of the lesions, the degree of obstruction of one or more of the main arteries, the rapidity of development of the lesions, the extent of collateral circulation and the activity of the affected person all determine whether symptoms will be present. The findings on physical examination are not helpful, and those on roentgen examination by presently available technics are of no assistance. The electrocardiogram obtained at rest or after exercise is unreliable even in the presence of known coronary disease, and therefore it is not very useful in diagnosis. The ballistocardiogram frequently is abnormal in middle-aged or elderly persons who do not have coronary disease. Results of laboratory tests are of no value. Death may be an early or late manifestation of coronary disease, and certainly affords a poor clue as to the effectiveness of prophylaxis. One is confronted with the task of find-

ing effective prophylaxis for a disease the cause of which has not been determined. Confusion is certain to result.

ALMOST IRREMIABLE CAUSES

Factors in the etiopathogenesis of coronary disease may be divided into two groups: the immutable and the changeable. The immutable factors are listed in Table 1. Among races, incidence may vary as a result of genetic traits, longevity, frequency of other diseases predisposing to the development of coronary artery disease, dietary habits or perhaps other factors. A striking family history of coronary disease is sometimes encountered. Some families have a high incidence of hypercholesteremia, diabetes mellitus or hypertension, and coronary disease may be secondary to these conditions. Families with impressive histories of longevity usually have little coronary disease. Body build is inherited to some extent, although it may be modified by the individual's dietary habits. Endomorphic mesomorphs have a higher

TABLE 1
IMMUTABLE FACTORS IN THE ETIOPATHOGENESIS OF CORONARY ARTERY DISEASE

RACE	BODY BUILD
FAMILY HISTORY	CORONARY ANATOMY
Life expectancy	CORONARY PHYSIOLOGY
Hypercholesteremia	PERSONALITY
Diabetes	SEX
Hypertension	AGE
Coronary or cerebrovascular disease	

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incidence of coronary disease than do people who have other types of body build.

The anatomy of coronary arteries may be a factor in the etiopathogenesis of atherosclerosis. It has been shown that the intima of the coronary arteries of boys is thicker than that of girls,¹ and it has been suggested that this may be responsible in part for the male's predisposition to coronary disease. The distribution of the three main coronary arteries may affect the survival of the person who has coronary disease, although it does not appear to influence the incidence of the condition. The coronary vessels are unique in that they are small and arise directly from the first portion of the aorta. Through them, blood flows mainly during diastole rather than during systole. Whether these characteristics are significant is not known. Little detailed study of the coronary arterial wall has been carried out, but it is possible that anatomic or biochemical abnormalities occur which alter its filtering action, affecting transport of fats and proteins.

The personality of the individual has not been shown clearly to be a factor in the incidence of coronary disease, although emphasis formerly was placed upon this feature. Age is an important factor, for coronary disease is a condition of middle and late life. Part of the increase in the incidence of coronary atherosclerosis in recent years has been due to increased life expectancy. Also, manifestations of coronary disease are unusual in premenopausal women who do not have diabetes or hypertension. After the menopause, the difference between the sexes in the incidence of the disease declines sharply.

CHANGEABLE FACTORS

All of the factors mentioned above are immutable, with the exception of body build, which might be changed somewhat, and the sexual characteristics of men and postmenopausal women, which might be modified. Clinicians are primarily concerned with factors that are changeable. Much remains to be learned. It is probable that unrecognized factors are involved, and it is certain that more must be learned about methods of modifying the known factors. Table 2 lists some of the changeable factors which are thought to be important in the causation of coronary disease. Our knowledge is incomplete, but it is known that all of these factors can be modified by means presently available.

Except for diabetes mellitus, known endocrine abnormalities predisposing to arterial disease are not common. The incidence of coronary disease is increased in diabetic persons in most age groups. Careful control of diabetes may decrease the likelihood of development of arterial disease. Atherosclerosis of coronary vessels is generally thought to be more common among persons who have myxedema, although no statistical study has been

done to substantiate this clinical impression. Relief of myxedema by the administration of desiccated thyroid does decrease the hypercholesteremic characteristic of myxedema and thus could decrease the frequency of the development of clinical manifestations of coronary disease. Abnormalities of the adrenal cortex may lead to vascular disease, but in clinical practice this association is uncommon. The infrequency of coronary disease in premenopausal women who do not have hypertension or diabetes has suggested the possibility of treating coronary disease with estrogens in both women and men. For obvious reasons, prophylaxis of atherosclerosis by this method would not be practical on a large scale.

Certain systemic conditions are associated with an increased incidence of coronary atherosclerosis. Obesity definitely is a factor, particularly in mesomorphic persons, and it is a preventable and potentially curable state. Essential hypertension markedly increases the incidence of coronary atherosclerosis as well as the incidence of the disease in other arteries. Recent developments in hypertensive therapy have made essential hypertension more amenable to treatment than it was formerly. Irreversible changes in arteries may occur, however, and patients often die of myocardial infarction long after malignant hypertension has been treated satisfactorily. Acute hypotension may cause decreased coronary blood flow and result in myocardial infarction; prevention of hypotension, therefore, is of prophylactic value. Nephritis increases the frequency of arterial disease due to the development of hypertension. Nephrosis results in hypercholesteremia and atherosclerosis, but it has not been determined that myocardial infarction occurs as a direct result.

Interest in Rokitsansky's theory that the etiopathogenesis of atherosclerosis starts with formation of fibrin on the arterial intima has been reawakened by Duguid.² It is possible that this relatively neglected field of investigation may hold an important key to the clinical problem. The prophylactic use of anticoagulant drugs for persons who have experienced myocardial infarction appears to be of some value, but it is directed

TABLE 2
CHANGEABLE FACTORS IN THE ETIOPATHOGENESIS
OF CORONARY ARTERY DISEASE

ENDOCRINE IMBALANCES	DIET
Diabetes	
Myxedema	Fat
Adrenal disease	Protein
Sexual changes	Carbohydrate
	Total calories
	Vitamins
SYSTEMIC CONDITIONS	EXERCISE
Obesity	
Hypertension	
Hypotension (acute)	
Nephritis and nephrosis	HABITS
	Tobacco
CLOTTING MECHANISMS	Alcohol
	"STRESS and STRAIN"

at the prevention of a complication rather than at the prevention of atherosclerosis itself.

HYPERCHOLESTEREMIA

The frequent association of hypercholesteremia with the clinical manifestations of coronary disease has led to the belief that this relationship is one of cause and effect, and that the atherosclerosis is of dietary origin. Emphasis has been placed upon the percentage of fat in the diet and upon the ratio of unsaturated fat content to the total fat content. Polyunsaturated fats are largely of vegetable origin, although some fish furnish such fats. It has been shown that low-fat diets or diets containing a high percentage of polyunsaturated fat tend to decrease the plasma cholesterol concentration. Whether or not such a decrease is of prophylactic or therapeutic benefit is unknown. Ahrens and associates³ have discussed the possibility that "bad" dietary fats cause abnormal serum lipid contents leading to atherosclerosis and eventually to coronary disease. They state that this chain of events is unproved and that there may be an unknown factor or factors in the sequence. It has been observed that the plasma cholesterol concentration is not infrequently normal in young persons who have symptoms or signs of coronary disease. This fact suggests that there is some important, unknown factor in the etiopathogenesis of coronary atherosclerosis. The difficulty of making a clinical diagnosis of coronary disease and the lack of reliable methods for evaluating atherosclerosis *in vivo* make interpretation of dietary and serum lipid changes hazardous.

Studies have been carried out relative to the distribution of fat in the diet and to the plasma cholesterol concentrations of people in many nations. Recently, Keys⁴ has summarized these findings. It is unlikely that this avenue of investigation will yield definitive information of clinical importance, for multiple factors impossible to control in such studies make evaluation of the results difficult.

Alleged changes in the fat content of the American diet through the years have been thought to be related to the increased incidence of coronary artery disease.⁵ This view has been criticized by Page and his associates⁶ on the grounds that there is no proof that either the fat content or the ratio of unsaturated fat content to total fat content has changed. Ahrens and associates³ and Stare and co-workers⁷ have advised against radical changes in the American diet on the basis of presently available knowledge. The possibility of a moderate reduction in the percentage of calories furnished by fat has been suggested. Obesity should be avoided. Any benefit derived from advocating changes in the diet for the general public would be outweighed by the resultant anxieties. Further research is a primary need at this time.

Though much experimental evidence has been compiled to indicate that there is a relationship

between hypercholesteremia and atherosclerosis, Ahrens and associates³ point out that the difficulty in producing atherosclerosis experimentally, dissimilarities between the effects on laboratory animals of the experimentally-produced disease and pathologic changes in man, and the rarity of myocardial infarction in animals subjected to experimentally-produced atherosclerosis indicate that a direct analogy cannot be drawn between the experimentally-produced disease and the disease in man. The recent report by Hartroft and Thomas⁸ on the experimental production of myocardial infarction was received with interest, but Ahrens and associates³ noted that it was necessary to use every means of causing atherosclerosis available to the experimenter, and doubted the relationship between the experimentally-produced condition and the naturally-occurring disease.

The association of diseases causing hypercholesteremia with the development of atherosclerosis and coronary disease also has been recognized. Familial hypercholesteremia and diabetes are the most frequently encountered clinical conditions of this type. It is possible that both the primary disease and atheromatosis are hereditary, but that they are independent, as Ahrens and associates³ have suggested.

The possibility that the protein or carbohydrate content of the diet may be significant in the etiopathogenesis of atherosclerosis has been considered. It is unlikely that the protein content is important, for various studies have indicated that the plasma cholesterol concentrations and mortality from heart disease have been similar in racial groups eating diets containing widely varying percentages of protein. Diets that are low in fat are high in carbohydrate, particularly starches. Whether starches have any protective value against atherosclerosis is unknown.

OTHER FACTORS

Closely allied to dietary habits is exercise. Body weight depends on a balance between caloric intake and expenditure of energy. When hard physical work is done, it is convenient to eat a high percentage of fat as a concentrated source of calories. No specific benefit from exercise has been demonstrated in persons who maintain a steady body weight by adjustment of caloric intake to the amount of exercise performed, although it seems reasonable that maintenance of good muscular tone would be beneficial.

Statistical studies by Mills and Porter⁹ and by Hammond and Horn¹⁰ have indicated an association between tobacco smoking and coronary artery disease. Hammond and Horn¹⁰ studied the relationship between smoking habits and death due to a number of diseases in a large group of men. The mortality from coronary disease was significantly higher among men who smoked cigarettes moderately or heavily than among non-smokers. Berkson¹¹ believes that smoking may increase the

incidence of various diseases by increasing the biologic age of the smoker, rather than by causing disease directly. Regardless of interpretation, it seems certain that smoking cigarettes does increase the susceptibility to death from coronary disease. Drinking of alcoholic beverages has been alleged to offer protection from the development of coronary atherosclerosis, but this belief appears to be based on fallacious impressions and has no scientific support.

Much has been said about the association between coronary artery disease and "stress and strain." These terms are difficult to define and are influences that cannot be measured quantitatively. Comparisons have been made between the habits and pressures of life in a "civilized" society and those observed among "primitive" people, and the conclusion has been drawn that our modern urban existence is much more "stressful." Sufficient attention has not been focused on the fact that stresses of one group may not be within the realm of another, but that the second group may be subject to stresses not experienced by the first. Business pressures, social engagements and transportation difficulties may not affect the life of agrarian people of underdeveloped areas, but the mere maintenance of life, the eking out of a bare existence economically, and ill health may be problems that would overshadow our real or fancied troubles. It is, therefore, unrealistic to believe that our lives are full of "stress" and that those of the people of "primitive" societies are tranquil. Then too, individuals in our own society are subject to various types of "stress" and respond differently in similar situations. No reliable scientific data have been gathered which demonstrate that

"stress and strain" are significant in the etiopathogenesis of coronary disease.

CONCLUSION

Is coronary atherosclerosis preventable? At the present time, it is not. Reduction in the percentage of fat content in an American diet and cessation of cigarette smoking might lower somewhat the incidence of this important condition, but it is unlikely that these measures will be practiced on a large scale, for habits have a stronger hold on men than do theories.

Effective prophylaxis must await accumulation of basic knowledge relative to the etiopathogenesis of atherosclerosis and coronary disease.

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Campaign for Salk Vaccination Will Resume

USPHS has decided to resume its public educational campaign because the drive last winter and spring fell short of expectations. In the words of Secretary Flemming, ". . . we have not made nearly the progress we could and should have made during the year—a year in which for the first time there was no shortage of vaccine at any time in any area."

The Advertising Council will again carry out a promotion campaign, with the cooperation of the AMA, the National Foundation, state and local health departments, and private groups.

Surgeon General Burney says that of the population under age 40, about 53 per cent has not had the three basic injections, and over a third has had no vaccine at all. There were 1,815 cases of para-

lytic polio during the first nine months of the year, 258 more than in the same period of 1957.

Cited as a disturbing factor was that in six states (Michigan, New Jersey, Virginia, Texas, West Virginia and California) the majority of paralytic cases, 416 out of 781, were among children under five. Of those 416, four out of five had had no vaccine.

The increase in the number of paralytic cases is no reflection on the efficacy of the vaccine. During the 3½ years of its use, the effectiveness rate has held at between 60 and 90 per cent. Nor is there any evidence that properly vaccinated persons are losing their immunity.

Both Mr. Flemming and Dr. Burney expressed doubts over the need for any compulsory program of vaccination for polio.

State University of Iowa College of Medicine

Clinical Pathologic Conference

SUMMARY OF CLINICAL FINDINGS

A 64-year-old retired farmer was admitted to the University Hospitals at 7:30 one evening in vascular collapse. Four days prior to admission, he had developed a cough that produced two or three cups of mucoid sputum per day. The night before admission, he was restless and complained of experiencing pain in his upper abdomen when lying on his right side. During the following day, he had had seven or eight loose bowel movements, with black, tarry, foul-smelling stools. He also complained of a dull ache across the lower anterior chest which had lasted about two hours and then had localized in the upper abdomen, where it persisted until the time of admission. Also, on the morning prior to admission, he had vomited two two or three pints of coffee-ground material. He had then been unable to take any solid food, but drank four glasses of milk. The vomiting persisted during the day. He had been given a "shot" just before being sent to the hospital.

Immediately following admission, he was given 1,000 cc. of blood and several ampules of norepinephrine. After that infusion, the blood pressure rose to 120/70 mm. Hg.

According to the patient's wife, his upper-abdominal discomfort had persisted for 20 years, coming on between meals and being relieved by alkalies and food. One year prior to his present illness, he had been seen in this hospital with symptoms and electrocardiographic changes suggesting a myocardial infarct. At that time, x-rays had shown a duodenal ulcer and a small hiatus hernia.

During the past nine or 10 years, he had complained of an increasing frequency of urination, to seven or eight times during the day and three or four times during the night, with hesitancy and decreased force of the urinary stream. There had been no flank pain, chills or fever.

Although the patient was at home just prior to admission, he had spent much of the preceding year at a mental health institute, where he received shock treatment for an "organic brain syndrome."

Physical examination after the emergency treatment revealed an acutely ill elderly man, who was disoriented and cyanotic. The blood pressure (with norepinephrine) was 112/70 mm. Hg. The pulse rate was 120 per minute and irregular. The respiratory rate was 40 per minute. There were beads of perspiration on the forehead. The pupils were of equal size, and both reacted to light and accommodation. The conjunctivae were pale. There were Grade III arteriosclerotic changes of the vessels in the fundus. The dental hygiene was poor, the

pharynx was injected, the tongue was coated and dry, and there was dried blood on the lips.

The anterior-posterior diameter of the chest was increased, and the patient was using his accessory muscles of respiration in his labored, rapid and shallow breathing. There were fine, moist rales at the bases of both lung fields, prolongation of expiration and a few coarse rhonchi over the left lower lung field. The examiner was unable either to hear heart sounds or to palpate a point of maximum impulse. No venous distention was evident. Marked tenderness was present in the upper midabdomen. The liver was palpable one fingerbreadth below the right costal margin. The bowel sounds were hypoactive. Suprapubic dullness was percussed to midway between the symphysis and the umbilicus. The rectal tone was normal. The prostate was from 1 to 2+ enlarged. There was an area of induration in the right lateral lobe of the prostate. No abnormal masses could be palpated through the rectal wall, and no gross blood was seen on the examining finger. The extremities were cool and dry. The neurological examination was normal insofar as could be determined in a disoriented and uncooperative patient.

The admission hemoglobin was 16.5 Gm./100 ml., with a white blood count of 13,200/cu. mm. and a differential count of 70 polymorphonuclear leukocytes, 2 eosinophils, 18 lymphocytes and 10 monocytes. The urine was alkaline and had a specific gravity of 1.003, with 1+ albumin, no sugar and a negative microscopic examination.

After receiving the norepinephrine and two units of blood, the patient was transferred to the ward. A chest x-ray film taken at that time showed bilateral basilar congestion, with left pneumonitis. An x-ray film of the abdomen revealed no free air or signs of bowel obstruction. The electrocardiogram revealed non-specific T-wave and ST segment changes consistent with myocardial disease. The patient was treated with penicillin, 600,000 units, immediately and every eight hours, and streptomycin, 0.5 Gm. intramuscularly daily. Nasal oxygen was begun at a rate of 6 L/min. A Levin tube was passed and attached to Wangenstein suction. The patient was kept in semi-Fowler's position. He was immediately given 10 mg. of morphine sulfate intramuscularly, and later that evening he was given 0.8 mg. of lanatoside C intravenously and 0.4 mg. q. 3 h times three. During the middle of the night he received one dose of 50 mg. of ephedrine intramuscularly.

The pulse slowed from 120 to 88/min. as the patient was digitalized. The blood pressure was maintained at 110/70 mm. Hg. most of the time by careful regulation of the rate of administra-

tion of blood containing norepinephrine. It was observed after admission that the patient was completely unresponsive, appeared cyanotic, had labored respirations and had produced no urine. The blood urea nitrogen at the time of admission was 31 mg./100 ml., and the creatinine was 2.7. The sodium was 140 mEq./L., the chloride 111, the CO_2 13 and the potassium 6.7. The patient died 18 hours following admission.

SUMMARY OF CLINICAL DISCUSSION

Dr. G. H. M. Thornton, Internal Medicine: The problem to be considered today is that of a 64-year-old man who had had massive bleeding from the alimentary canal. Because he had hematemesis as well as melena, we feel confident in confining the site of his blood loss to the upper gastrointestinal tract—that is, to the esophagus, the stomach or the duodenum as far down as the ligament of Treitz—for blood is rarely vomited from below the ligament of Treitz.

A detailed consideration of the history shows that this man's illness began with a cough four days prior to his admission. He brought up some two or three cupfuls of sputum a day, so it must have been a severe cough, and if he didn't have bronchiectasis, I think the amount of sputum suggests left ventricular failure. On the other hand, there is no mention of any orthopnea, and I think a man who is bringing up this amount of sputum from left ventricular failure would be almost certain to have orthopnea, and his sputum would tend to be frothy rather than just mucoid. Acute lung infection, therefore, was the most likely cause of his cough.

There are two ways in which his cough may have been related to gastrointestinal hemorrhage. First, the mechanical effect of coughing would be to increase the pressure in esophageal veins, and this could have triggered the bleeding from esophageal varices. It is unusual to obtain a history of coughing as a precipitating cause of bleeding from esophageal varices. Second and a more likely mechanism would be peptic esophagitis with erosion of the varices. On the other hand, he had no evidence of liver disease. In particular, there is no mention of splenomegaly, and apparently he wasn't in congestive failure, so I think it unlikely that he had varices. In fact, I think we can strike varices off the list of possible diagnoses.

The patient's cough may have been significant in another way. If it were due to pneumonia, the bleeding might have been associated with acute erosive gastritis and could have been from the gastric mucosa. It is unusual for a patient to bleed profusely and be in a severe state of shock as a result of erosive gastritis, so this is an unlikely possibility.

The next development, according to the protocol, was the onset of pain in the upper abdomen, a discomfort that was worse when he lay on his

right side. This pain is suggestive of a retroperitoneal lesion, either pancreatitis or an aneurysm in the retroperitoneal area. In these conditions, the pain may be relieved when the patient gets up and bends forward.

On the other hand, the pain of a hiatal hernia, which this patient was found to have, is made worse by lying down, and pain from a duodenal ulcer may be increased by lying on the right side.

Later, the pain changed character and became associated with retrosternal discomfort, suggesting a myocardial infarction. Anginal pain without actual coronary occlusion is not unusual in elderly patients who have lost blood, and I don't think one would be justified in making a clinical diagnosis of myocardial infarction in this patient. During the day before admission, I estimate, the patient must have lost two liters of blood by hematemesis and melena. The vomiting persisted during that day, and I should like to ask Dr. Mason whether there were a change in the character of the vomitus. Did he continue to vomit blood?

Dr. E. E. Mason, Surgery: The vomitus was said to be coffee-ground material.

Dr. Thornton: The next paragraph in the protocol is an important one, for it is the beginning of one of the positive props that I shall use for my diagnosis. That paragraph implies that the patient was in such severe shock that blood transfusion was considered inadequate treatment, and he was given norepinephrine. As we go through the protocol, we find that norepinephrine was required right up to the time of death to maintain a recordable blood pressure. Thus, either there was bleeding from a very large vessel or there was some other cause of severe shock besides hemorrhage. Other possible causes of severe shock could have been perforation of a viscus, or possibly an associated myocardial infarction.

The history obtained from the patient's wife showed that he was known to have had a duodenal ulcer for a number of years. If he were bleeding from a duodenal ulcer, I think there must have been either an associated perforation or a penetration of the pancreas and an erosion of a large vessel, possibly the splenic artery. In the latter circumstance, I think that severe back pain would have been much more likely than epigastric discomfort. For this reason, I think that an eroding duodenal ulcer is an unlikely explanation. Furthermore, the x-ray evidence gives no support to the idea of perforation.

The statement in the third paragraph of the protocol that one year previously the patient had had what seemed a myocardial infarction provides evidence of a possible source of embolus, either from a mural thrombus in the left ventricle or from a left auricular thrombus with a consequent auricular fibrillation.

Mesenteric embolism from an old myocardial infarction could have accounted for the severe degree of shock which accompanied the bleeding.

Diarrhea and bleeding usually occur first in this condition, but later there is almost certain to be intestinal obstruction. But the x-rays provided no evidence of intestinal obstruction, so I think it unlikely that there could have been a mesenteric embolus. The x-rays showed a hiatus hernia, and a patient who has that condition together with a duodenal ulcer is very likely to develop reflux esophagitis, especially when obstruction to the pylorus comes late in the course of a duodenal ulcer and there is a great reflux of acid gastric juices into the esophagus. It would be unusual for reflex esophagitis to cause severe bleeding without a previous history of heartburn or dysphagia.

Perforation of a peptic ulcer of the esophagus would account for the severe shock, but could be expected to cause subcutaneous emphysema, mediastinal emphysema or pleural effusion, usually on the left side.

The strain of coughing could conceivably have caused a volvulus of the patient's hiatus hernia, and might have accounted for the onset of the pain, for the bleeding and for a great deal of the shock. The amount of bleeding was probably greater than one would expect in such a situation, however, and the only case that I have seen of a volvulus of a hiatus hernia had tremendous distention in the left upper quadrant of the abdomen, a feature which is not mentioned anywhere in the protocol of this case.

During the nine years prior to his admission, the patient complained of increasing frequency of urination. This, I have interpreted as meaning that he probably had arteriosclerotic kidney disease. He had some symptoms of prostatism, but the urinary frequency makes arteriosclerotic kidney disease the more probable cause of his bleeding. The next paragraph in the protocol emphasizes the possibility of severe atherosclerosis affecting the brain, though the patient's brain syndrome may have been due to polycythemia or some other systemic disease rather than to atherosclerosis.

Another diagnosis to be considered in association with cerebral disease is a Cushing's ulcer of the stomach, a lesion which usually appears after an isolated incident in the brain such as a cerebrovascular accident. However, there is no history suggesting that an actual cerebrovascular accident preceded this patient's final illness, and the neurologic examination was negative. Thus, a focal brain lesion and a consequent Cushing's ulcer can be excluded.

The physical examination revealed an acutely ill man who was disoriented and cyanotic. I imagine that he was disoriented mainly because of anoxemia and atherosclerosis of his cerebral arteries, and was cyanotic because of his chronic lung disease. The severity of his shock is again emphasized by the statement that no blood pressure reading could be obtained until norepinephrine had been administered. The pulse was rapid and irregular, so it is quite possible that he had

auricular fibrillation with a left auricular thrombus from which an embolus could have become detached and lodged in a mesenteric artery. Yet, I have already given my reason for thinking he did not have a mesenteric infarct.

His having had extraordinary frequency of micturition for nine years might suggest the possibility of uremia, and uremia is a well recognized and fairly common cause of severe gastrointestinal hemorrhage. If he had uremia, however, I don't think his breathing would have been described as rapid and shallow. Rather, it would have been of the deep air-hunger type due to acidosis. Thus, I think his rapid, shallow breathing was due to his chronic lung disease, to an acute lung disease or possibly to a left ventricular failure.

There was further evidence of severe arteriosclerotic disease in his optic fundi. He showed Grade III arteriosclerotic changes in the retinal vessels. Examination of his lungs showed that he had emphysema, and this is of interest because emphysema is associated with peptic ulcer in a significantly large number of cases, and it also gave some indication that he had at least a chronic bronchitis and possibly a superimposed bronchopneumonia.

There was no evidence of congestive failure, which can in itself be a cause of gastrointestinal hemorrhage due to increased venous pressure. Sometimes it may cause esophageal varices, which may bleed. He had marked tenderness over the approximate site of his pain, but I don't think that this coincidence is very helpful except in that it makes an abdominal condition more likely than a myocardial infarction. He had no significant enlargement of the liver. His spleen was not mentioned, and we can therefore assume that it was not enlarged. The bowel sounds were hypoactive—a finding that contraindicates both an obstructive lesion, with which one expects hyperactive sounds, and a perforated ulcer, with which one would find a complete absence of them. He had some suprapubic dullness, perhaps because of a distended bladder but not necessarily so. It might have been due to blood or some other fluid in the peritoneal cavity.

There were some findings suggestive of a carcinoma of the prostate, but whether or not the patient had such a lesion has no bearing on his main diagnostic problem.

It is interesting that in spite of the fact that he had lost perhaps two liters of blood, his hemoglobin was still 16.5 Gm./100 ml. It may be that hemodilution had not yet taken place, and although he had lost so much blood, he was also somewhat dehydrated, and his hemoglobin had not yet fallen. On the other hand, this man might have been polycythemic before this incident, and his mental confusion would have been compatible with such a diagnosis. Peptic ulcer is significantly more frequent in people with polycythemia than it is in the general population, and this disease is also associated with bleeding. Thus, I think polycythemia is a possibility that I can't exclude com-

pletely, but the absence of a palpable spleen is perhaps a point against it. The patient probably had very little elevation of his white count, and that, I think, would be a point against perforation of a peptic ulcer. His urine had a low specific gravity, in spite of the fact that he was apparently dehydrated, and I think this supports my contention that he had chronic nephrosclerosis. His albuminuria supports such a theory.

In the next paragraph we see further evidence that this patient was in a state of extreme vascular collapse. He required blood and norepinephrine continuously. A chest x-ray showed and confirmed the presence of an acute lesion in the left lung. An x-ray of the abdomen at least produced no evidence in favor of either obstruction or perforation anywhere in the bowel. The electrocardiogram was not helpful. I don't believe it excludes the possibility of myocardial infarction, but it certainly doesn't prove that there was one.

The patient was then treated mainly for his lung infection and dyspnea with antibiotics and oxygen. A Levin tube was passed and attached to Wangenstein suction. I think this is a good procedure to use in the treatment of gastrointestinal hemorrhage, at least until one feels that the bleeding has stopped. Thereafter, I think it is better to go on with either a continuous milk drip or interval feedings. This patient was kept in a semi-Fowler's position, probably because he either continued to have pain or was dyspneic whenever he lay flat. Possibly the people in charge were still not convinced that he didn't have a perforation somewhere in the peritoneal cavity.

The patient was given morphine sulfate. I wouldn't have chosen that drug for the treatment of gastrointestinal hemorrhage. Morphine sulfate tends, itself, to cause vomiting in some patients, and unless there was severe pain, I would have preferred to use a barbiturate. In the presence of pain, I think I would have chosen Demerol rather than morphine. Later in the evening, he was digitalized, and during the night his shock apparently was so severe that he was given ephedrine as well as the other therapies that were intended to combat his hypotension. Thus, once again we see evidence that he was in extremely severe vascular collapse.

The final paragraph of the protocol is really just an account of the patient's failure to respond to treatment. There was no response to any measures that had been taken. His blood pressure could be maintained through the use of norepinephrine, but otherwise he showed no signs whatever of recovery. His blood urea was remarkably low in view of the fact that he must have lost an enormous amount of blood into his gastrointestinal tract. Usually such a hemorrhage causes a more pronounced elevation of the blood urea nitrogen. The raised electrolyte levels were probably just a manifestation of dehydration.

In my discussion of this protocol, I have tried to emphasize the three props on which I shall build a tentative diagnosis. First of all, right

through the protocol there is evidence of severe atherosclerosis affecting the cerebral arteries, the coronary arteries, the renal arteries and the retinal arteries. Thus, I think that this man had severe atherosclerosis, and I don't see why it shouldn't have affected his aorta and mesenteric vessels as well as vessels in other parts of his body.

He also had extremely profound shock—more profound than one usually sees with bleeding from the gastrointestinal tract, and the type of bleeding that one sees only in the involvement of a large artery. Other possible causes of this severe shock would be embolism, perforation of a viscus, or myocardial infarction. I have eliminated these alternatives in my interpretation of the clinical findings.

Then there was the patient's severe cough during the four days before the onset of bleeding, and I think that the trauma from this cough may have had some significance. Coughing increases the pressure inside the gastrointestinal tract, but it does so from the outside. Thus, it doesn't tend to cause an ulcer either in the esophagus or in the stomach or duodenum to perforate. On the other hand, violent coughing might be the final event in causing rupture of a thin-walled aortic aneurysm.

On the basis of my interpretation of the clinical evidence, I have settled upon a diagnosis of ruptured aneurysm of the abdominal aorta. There is some support for this conclusion in the type of pain that the patient experienced, in his age and sex, and in the fact that these aneurysms are probably more common than has been recognized. It is estimated that probably 25 per cent of them do rupture. The site of rupture of an aneurysm of the abdominal aorta is usually the third part of the duodenum, where the aorta lies right behind the duodenum and where the duodenum is retroperitoneal and therefore is held rigid. The type of bleeding that occurred was severe, massive melena, first of all, followed by hematemesis. This would fit very well with a rupture of a large vessel into the third part of the duodenum.

There are two points with which I should like some help. First, I should like to ask Dr. Mason whether there is any record of the presence or absence of arterial pulses in the patient's legs.

Dr. Mason: They were not recorded.

Dr. Thornton: Now I should like to know about the x-rays, Dr. Gillies. If I am right, I should expect to find some calcification in the region of the aorta.

Dr. Carl L. Gillies, Radiology: This patient was seen here on an occasion previous to his final illness, and at that time his gastrointestinal tract was examined. A hiatal hernia was demonstrated. Also, the examiner felt that there was a persistent fleck in the lower esophagus indicating a peptic ulcer in that area. Likewise, there was a persistent deformity of the duodenal bulb indicating an old duodenal ulcer without signs of activity. The patient was re-examined, but the findings in the lower esophagus were not confirmed by the second examination.

On the present admission, the patient was acute-

ly ill, and only a portable flat film was obtained. It did not show calcification of the aorta, but I believe that a lateral film would be necessary in order to rule it out. The flat film demonstrated no free air beneath the diaphragm, and showed a bowel pattern that appeared entirely negative, there being gas only within the colon.

The film of the chest demonstrated some free fluid within the left pleural cavity as well as in the right, but showed more in the left one, as well as some pneumonia. The chest x-ray was also a portable film. The heart did not appear to be unusually large, and the contour was within normal limits.

Dr. Thornton: Was there any erosion of the vertebral bodies?

Dr. Gillies: No, there was no evidence of erosion of the vertebral bodies such as we might have expected to see with an aneurysm.

Dr. Thornton: Well, of course Dr. Gillies' finding an ulcer in the esophagus on a previous occasion and some fluid in the left side of the chest casts some grave doubts upon my diagnosis and supports the possibility that this patient had a peptic esophagitis with a perforated peptic ulcer. But I think that the degrees of bleeding and of shock were greater than one could reasonably expect in such circumstances, and I shall stick to my original diagnosis in spite of the negative x-ray findings.

Dr. Mason: The admitting physician made a diagnosis of bleeding duodenal ulcer in a patient with a recent myocardial infarction. Are there any other diagnoses?

Dr. W. D. Paul, Physical Medicine and Rehabilitation: In reviewing the history, we find that this patient had had a duodenal ulcer, had used alkalies for relief, and had been confined for a time in a mental institution. This series of events raises the question of whether or not he had had alkalosis. Patients with peptic ulcer who vomit either from obstruction or from the ingestion of alkalies lose considerable chloride, develop frequency of urination, and then become irritable and show marked emotional changes. Their ulcer symptoms are intensified, they increase their intake of alkalies, and then their vomiting increases in severity. The specific gravity of the urine is low, traces of albumin are present, and casts can be found. Patients who have had repeated mild attacks of alkalosis may develop hypertension and symptoms of chronic nephritis.

If during an acute episode the use of alkalies is not stopped, the mental changes become marked, and it is for this reason that patients with peptic ulcers are at times committed to mental institutions. Early in the syndrome of alkalosis, the CO_2 combining power is markedly elevated, the blood chloride is reduced, and the blood urea, nonprotein nitrogen and creatinine are within normal limits. As the vomiting increases, the urea, NPN and creatinine increase causing a reduction of the CO_2 combining power. The ensuing sequence usually consists of oliguria, then anuria and finally death.

Massive hemorrhage from the gastrointestinal

tract can also cause nitrogen retention, but not to the degree seen in alkalosis. This patient had a peptic ulcer, gave a history of self-medication, and had been a patient in a mental institution—all of which should make us think of alkalosis. However, the degree of shock exhibited at the time of his admission was more in keeping with a massive gastrointestinal hemorrhage.

On the other hand, the severe pain of which he complained could well be the result of a small ulceration of the lower end of the esophagus, with resulting esophagitis. A rupture of the esophageal ulcer would allow air and infection to escape into the mediastinum, with secondary contamination of the pleural cavity. We know that infection below the diaphragm or in the mediastinum can be carried by the lymphatic drainage to the parietal pleura. This could have accounted for the changes seen in the chest film.

It would appear that the terminal clinical picture was the result of many factors. The epigastric distress associated with the duodenal ulcer could have been intensified by the use of the soluble antacids. The increased gastric activity always enhances the degree of hyperacidity, and it in turn may have resulted in the esophageal ulceration. Rupture of the ulcer led to a mediastinitis and empyema. Massive hemorrhage could have accounted for the severe shock.

We must always keep the syndrome of alkalosis in mind when we treat an individual with symptoms such as this man presented. One is often tempted to place a Levin tube in the stomach of such a patient, but such a procedure could either produce or intensify an existing alkalosis, increase an esophagitis, spread an infection, and lastly, traumatize the ulceration and start a hemorrhage.

Dr. Mason: Doesn't the milk alkali syndrome show renal calcinosis by the time that renal impairment is present?

Dr. Paul: No, the patients we have seen who died of anuria had no renal calcinosis or stones.

Dr. Mason: Dr. Clifton, what are your ideas about this case?

Dr. J. A. Clifton, Internal Medicine: The information that an esophageal ulcer was demonstrated in this patient on a previous admission and that a left pleural effusion was found when he came here for the last time has cast an entirely new light upon the problem. Lacking those facts, I think I would have agreed with the admitting house officer that the most likely possibility in this man was a bleeding duodenal ulcer. However, that diagnosis would not have accounted for all of the picture, and I would probably have thought the patient had a myocardial infarction which led to his irreversible shock.

With the additional findings, I think there is a strong possibility of his having had a ruptured peptic ulcer of the esophagus with an empyema on the left.

Dr. Emory D. Warner, Pathology: With regard to the cause of death, the anatomic findings at the

time of autopsy were fairly clear. There was a perforated peptic ulcer of the distal esophagus, the perforation being approximately 1 cm. in diameter. The perforation was in the common location—left posterolateral into the left pleural cavity. There was a hiatus hernia with a rather short esophagus and with the cardia of the stomach held slightly above the diaphragm. Ectopic gastric mucosa in the distal esophagus was involved in the margin of the ulcer. Whether or not the ulceration actually was primarily of the ectopic gastric mucosa or was adjacent to it could not be determined. The latter situation is said to be more common in cases of this type.

There was necrotizing mediastinitis around the perforation, and 1,300 cc. of coffee-ground, very dirty fluid was present in the left pleural cavity. The right pleural cavity contained 400 cc. of similar material. Extensive cellulitis involving the thoracic soft tissues had extended through the hiatus hernia into the peritoneal cavity, and there was generalized peritonitis. About 150 cc. of dirty fluid similar to that in the pleural cavities was present, and there was generalized acute fibrinopurulent exudate over the peritoneal surfaces.

The patient did not have distinct pneumonia in the sense of massive consolidation. The right and left lungs weighed 500 and 400 Gm., respectively. The extensive cellulitis of the pleura extended into lung substance for a considerable distance and may have obscured some primary pneumonia. At the time of the autopsy, however, there was no pneumonia deep in the lung tissue.

There was severe arteriosclerosis of the coronary vessels, with complete occlusion of the anterior descending branch of the left coronary approximately 2 cm. distal to its origin. This had resulted in a through-and-through myocardial infarct involving the anterior part of the apical portion of the left ventricle. It was healed with scar tissue replacement. A partially organized, old mural thrombus overlay the old infarct. No embolic phenomena were found, nor was there evidence of recent myocardial infarction. The age of the infarct fitted well with the time of the patient's previous admission to this hospital.

There was moderate arteriosclerosis of the kidneys, but the kidneys were not extremely scarred and had essentially normal weights. There was surprisingly little atherosclerosis of the aorta. The heart weighed 410 Gm., which is within the limits that might logically be expected in a patient with an old infarct, and is not particularly suggestive of hypertension.

CLINICAL DIAGNOSES

1. Bleeding duodenal ulcer
2. Myocardial infarction.

DR. THORNTON'S DIAGNOSIS

Ruptured aneurysm of the abdominal aorta into the duodenum.

ANATOMICAL DIAGNOSES

1. Ectopic gastric mucosa, with distal esophagus ulceration and perforation of esophagus
2. Acute pleuritis with effusion, bilateral (*Proteus vulgaris*)
3. Acute peritonitis with ascites
4. Hiatal hernia, diaphragm
5. Healed peptic ulcer, duodenum
6. Coronary arteriosclerosis, severe, anterior descending branch left coronary, with myocardial infarction, anterior left ventricle and interventricular septum, old
7. Adenomatous polyp, sigmoid colon.

Dr. R. F. Sheets, Internal Medicine: Why wasn't there any air in the left pleural space?

Dr. Warner: I don't know why there wasn't, and I suppose I can't say definitely that there wasn't any. When the chest plate is taken off, air is admitted to the chest and the lung tissue collapses to some extent. This may occur before a satisfactory inspection can be accomplished, and thus it is conceivable that there could have been some air in addition to the fluid in the left pleural cavity. There was none under pressure, and there was no interstitial emphysema. Also, there was no gas in the peritoneal cavity.

Dr. Mason: Dr. Gillies, in retrospect can you think of any indications of air under the diaphragm in your x-rays?

Dr. Gillies: No.

Dr. Warner: The patient did have an old duodenal ulcer that had healed.

Dr. Stuart C. Cullen, Anesthesiology: This case, I think, is a classic example of the difficulties one can get into with the almost universal application of norepinephrine (*Levophed*) in circumstances of acute hypotension.

If one reviews the basic actions of norepinephrine, he finds that it has an equivocal effect on cardiac output in normal animals or human beings. There is an elevation of the arterial tension, presumably by reason of its direct or adrenergic effect on the vessels. For practical purposes, there is no inotropic effect on the heart, and this is a particular in which norepinephrine differs from epinephrine. There is a reflex slowing of the heart as a consequence of the elevated arterial tension. In circumstances of acute hemorrhage, it has been observed that there is an increase in the cardiac output with the application of norepinephrine, probably as a consequence of the improved venous return. Perhaps Dr. Eckstein has a comment to make regarding the influence of these various drugs on veno-motor activity and the moving of blood out of the venous side of the system—a system which, by the way, has been rather thoroughly neglected in the consideration of the changes that take place in hypotension.

When this patient was admitted, he was in acute hypotension and had a history of myocardial infarction, and the assumption was made that he had experienced another infarction, along with

other difficulties which have been mentioned. Norepinephrine is traditional and is recommended for patients who have myocardial infarction in order to relieve their hypotension. However, the thing that created difficulty in the management of this patient was that no one sought the reason for his acute hypotension. Unless I am mistaken, he was given a total of only 1,000 ml. of blood. As I see it, when his blood pressure had been restored to normal by means of norepinephrine, too little attention was paid to his hypovolemic state, though I think that it was fairly evident.

Thus, it seems to me that the prime hazard in the more or less routine application of norepinephrine is that it encourages the neglect of hypovolemia.

Dr. J. W. Eckstein, *Internal Medicine*: I have been asked to comment on the use of digitalis in this patient. The prime indications for the use of that drug are congestive heart failure and supra-ventricular mechanism disturbances such as paroxysmal atrial tachycardia and rapid atrial fibrillation or flutter. In the case of heart failure, the drug acts to improve the efficiency of myocardial contraction. In the absence of myocardial failure, the administration of the drug may actually cause the cardiac output to decrease. In the supra-ventricular tachycardias, the heart rate may become so rapid as to result in decreased cardiac filling and a reduced cardiac output. The purpose of digitalis in these conditions is to reduce the rate, increase the diastolic filling time and prevent a long-continued low output which might lead to impairment of coronary heart flow, myocardial hypoxia and heart failure.

Digitalis is not effective in reducing the heart rate when sinus tachycardia exists in severe illnesses or in association with hyperthyroidism, shock or fever. In these conditions, toxic doses of the drug would be required to affect the rate appreciably.

There might be some rationale for using digitalis in "peripheral vascular collapse." Here, cardiac output and arterial pressure are reduced. This may lead to reduced coronary blood flow, and heart failure could develop because of myocardial hypoxia, even though the congestive manifestations were absent. It would be very difficult, however, to determine when myocardial decompensation exists under these circumstances, and it might be dangerous to give the drug, since its administration in the absence of failure may cause cardiac output to fall.

In this patient, there were no signs of congestive heart failure, and the electrocardiogram showed no supra-ventricular mechanism disturbance. Thus, on the basis of the information in the record, I should say that digitalis probably was not indicated in this patient.

I should like to take this opportunity to make a few comments about the words *peripheral vascular collapse*. This is a rather ambiguous and possibly misleading phrase. We all recognize the clinical state with which the words are associated. The

weak, pale, sweating patient with a rapid, thready pulse and arterial hypotension was described to us in our early physiology courses. At one time, we were taught that this state was caused by widespread peripheral arteriolar dilatation and that it resulted in hypotension and failure of perfusion of vital organs. On the contrary, however, failure of the return of blood to the heart because of abnormalities on the venous side of the circulation—rather than loss of arteriolar resistance—seems to be the predominant defect in this form of shock.

The veins of the body contain about 75 per cent of all the blood in the circulatory system. The venous walls have inherent tone and are capable also of active constriction and dilatation. Any discrepancy between the volume of blood in the venous system and the tonic state of the vessel walls would have pronounced effects on peripheral and central venous pressure. If other factors remain constant, a fall in venous pressure would indicate reduced venous return and reduced cardiac output. In hemorrhagic states, venous pressure may fall because of loss of blood from the system. In so-called "neurogenic" shock, blood is not lost from the system, but the veins lose their tonus and dilate. As this occurs, blood tends to pool in the periphery of the body, and venous pressure falls. When the cardiac output falls, the heart no longer pumps enough blood into the arterial system to maintain the normal tension in the arterial walls, and blood pressure falls.

If "peripheral vascular collapse" has not persisted in a given instance for a long enough time for severe tissue hypoxia and irreversibility to occur, it may be possible to reverse the condition temporarily through the administration of vasopressor drugs such as norepinephrine. We have observed that this drug causes marked peripheral venous constriction and shifts the blood from the extremities. It is reasonable to suggest that this constriction pushes blood centrally so that more of it becomes available for the heart to use in increasing its output. It is known that right atrial pressure rises and cardiac output increases following the administration of norepinephrine to dogs in hemorrhagic shock. This additional evidence from animals supports the suggestion that peripheral venous constriction does push blood into the central vascular reservoir. I believe that the vasopressor drugs such as norepinephrine help to restore blood pressure in shock patients primarily by peripheral venous constriction, rather than by peripheral arteriolar constriction.

In some forms of severe shock, the peripheral veins seem to lose their tonus almost completely and dilate greatly. Under these circumstances it takes tremendous quantities of blood in the form of transfusions into the vascular system to bring the venous pressure to a level great enough to fill the heart properly. If transfusions are given to the extent that filling pressure and cardiac output cause clinical improvement, the normal degree of venous tone may return. If the vascular system

is overloaded with blood, this return to normal venous tone may increase the return of blood to the heart much more than is desirable. This increased return may overload the heart and lead to hypervolemic failure. This situation may obtain in some elderly patients with arteriosclerotic heart disease who have been transfused during surgical procedures and who go into hypervolemic heart failure during recovery from the anesthesia.

Dr. Thornton: I should like to ask for a brief statement of what constitutes the best form of treatment for this rather common association of peptic esophagitis and duodenal ulcer.

Dr. D. M. Sensening, Surgery: When I read the protocol for the case being discussed here today, I said to myself, "Oh yes, shock without blood loss, 16 Gm. of hemoglobin and fluid in the left hemithorax—why this is a perforation of the esophagus!" But as a matter of fact, we weren't thinking quite that clearly on the night when we saw this patient in the Surgical Outpatient Department. For all intents and purposes, the patient was DOA. He had no blood pressure at all, and his pulse was not palpable. Thus, unmindful of Dr. Cullen's teachings, the examining physician gave him a half-ampule of pure Levophed intravenously. The patient then woke up and developed a blood pressure. He began to talk to us and to give us some of his history, but he didn't say that he had a hiatus hernia. His previous record was not available.

We thought that perhaps the patient had had a myocardial infarction because of his picture of shock. We ordered a chest film and supportive therapy. He was given blood because of his history of vomiting coffee-ground material, but he didn't give the history of severe blood loss. We thought that the diagnosis of severe bleeding from a duodenal ulcer was probably incorrect. We did think that he might have had a perforation of a duodenal ulcer, but his abdominal findings at that time did not support that theory. The medical consultant thought that he probably had a myocardial infarction, and admitted him to the Medical Service. The chest film which showed the fluid on the left side was actually a supine film. An upright chest film might have shown fluid more clearly.

As far as treatment is concerned, I believe that this patient was in such poor condition that very little could have been accomplished by surgical treatment. If we know the diagnosis and if the patient can be brought into a condition in which he can withstand operation, left thoracotomy with resection of the area of perforation and an esophagogastronomy is indicated. In this patient, there was a great deal of infection which, of course, would have made surgery especially hazardous. The perforations of the esophagus which we have discovered through endoscopic examinations have, by and large, responded to conservative treatment including antibiotics. But when the perforation is large, as in this instance, I think it unlikely that

conservative treatment can prove successful. It is probable that this particular patient was in such poor condition that he couldn't have withstood operation.

Dr. L. E. January, Internal Medicine: The assumption seems to have been that this man had an acute myocardial infarction when he was admitted to the hospital. I should remind you that an acute myocardial infarction complicated by profound shock almost invariably alters the electrocardiogram in a diagnostic manner, and nothing of the sort occurred here. Possibly there is at least one exception—that certain cardiac arrhythmias, whether complicating an acute myocardial infarction or not, may lead to shock. But here too the electrocardiogram supplies the definitive information which was lacking in this case.

Dr. Cullen: How long is it necessary to continue norepinephrine in the treatment of shock due to acute myocardial infarction?

Dr. January: Norepinephrine has been administered for this purpose for as long as two weeks, and these patients have survived. I should like to emphasize that the use of norepinephrine in acute myocardial infarction is by no means routine therapy, and there should be a good reason for beginning it in the first place. The blood pressure more often than not falls with acute myocardial infarction, but usually within an hour or two it stabilizes itself, sometimes at a lower than normal level. One does not attempt to treat "low blood pressure"; rather, the clinical signs of shock should exist, and there should be no doubt that it is due to myocardial infarction. Then, if norepinephrine is administered, it should be given in a dosage and at a rate sufficient to raise the blood pressure, but not necessarily to maintain it at a normal level. Then periodically, the rate of injection should be diminished, or the drug discontinued, to see whether the blood pressure will remain stable without further treatment.

I am sure that norepinephrine often is used in the therapy for acute myocardial infarction when it isn't necessary, and thus it gets considerable credit for saving lives by reversing the shock of myocardial infarction. And admittedly, if the shock is profound it is an extremely poor prognostic sign. Nearly 80 per cent of such patients die, and possibly if norepinephrine therapy is limited to this group only 60 per cent of them die. Norepinephrine is not the whole answer to the problem of shock from acute myocardial infarction, since a significant arrhythmia can have produced or can perpetuate the shock, and it often requires additional therapy. I should repeat, however, that the electrocardiographic findings should heavily weigh any decisions that are made regarding acute myocardial infarction when the patient presents with the circumstances that prevailed in this case.

Dr. Mason: I have had much more time to think about this man than some of the others have had, and I have decided that having made such a diagnosis in a patient who is so severely ill, one might

anesthetize the chest wall locally and put a trochar through it, put a tube through the trochar and use closed water drainage so that the lung could be kept expanded and the left chest drained. A nasal gastric tube such as was used in this case would be necessary in order to keep the stomach empty. Then, by supporting the patient with norepinephrine and some blood, there would be a remote possibility of one's keeping him alive. In retrospect, we now realize that the patient whom we have been discussing didn't have a great deal of bleeding, and that his shock was from mediastinitis.

Actually, this patient should have been treated surgically when he was here two months earlier or when he was here a year earlier. When a man has a duodenal ulcer, a hiatal hernia and esophagitis, and an esophageal ulcer with symptoms, he should have surgery for acid peptic disease—the same kind of distal gastric resection as is done for complications of duodenal ulcer. The treatment for bleeding duodenal ulcer is to remove the ulcer, but one can't remove an esophageal ulcer for bleeding because with anything less than a total gastric resection there will be reflux esophagitis and more bleeding from the esophagus or stricture at the esophageal gastric anastomosis.

Now this business of shock due to mediastinitis in an interesting problem. Why should a patient go into shock when he hasn't bled severely but just has an infection? And when does his shock become irreversible? Richard Lillehei has shown that if one perfuses the intestine of an animal that is in shock from hemorrhage using oxygenated blood from a normal animal, the shocked animal can survive. Some feel that the bacterial toxins from

the intestinal tract are responsible for irreversibility. Recently, Zweifoch and Raniers used a colony of rats that had been raised without germs, but when they shocked them the animals developed irreversible shock no different from that of animals that had bacteria in their intestines.

The problem of whether to use norepinephrine and whether this peripheral vascular collapse is due to endotoxins is wide open, but I believe that I am correct in saying we are agreed in feeling that norepinephrine was helpful to this patient. The difficulty was that we did not then make the proper diagnosis and institute appropriate treatment to correct the underlying problem.

Dr. Sensening: If we had recognized the presence of fluid in the patient's left chest and had performed a thoracentesis, we could have made the diagnosis.

Dr. Mason: When chest fluid has been found at autopsy, I've occasionally felt bad about having failed to do a tap. But sometimes, toward the end of these episodes and perhaps in this patient, the physical examination does not reveal fluid in the chest, and then it accumulates fast enough to contribute to the patient's demise. I think you are right in saying that it would have been nice if this chest had been tapped. Perhaps this might have allowed the patient to breathe better, and perhaps his difficulty in breathing was due to fluid. There were 1,500 cc. in the left chest and 400 cc. in the right. He had old adhesions on the right which also interfered with breathing, and that factor may also have contributed to his death.

Dr. Warner: His infection wasn't just mediastinitis. I would call your attention once again to the fact that he also had generalized peritonitis.

Take Care What You Say to the Nurse

Nowadays we hear complaints about the alleged coldness or indifference of hospital nurses. A strange complaint about a profession where personal attention is the essence of its mission!

There has come to be a greater freedom of exchange now between doctors and nurses. The doctor no longer barks simple orders which the nurse stands up meekly to take them. They can and do talk about the patient, and it is an even exchange of ideas.

This improved level of communication brings with it a danger. If the doctor is critical of the patient, the nurse absorbs the physician's attitude. He may let the nurse know that he thinks the patient is a whiner, a complainer, a hypochondriac, a malingerer, or an unreasonable old so-and-so.

The nurse takes her cue. Her response to the patient's next request for some small service may then reflect the attitude which the doctor himself has just taught.

There is a dignity about illness, about pain—aye, even about hypochondriasis. Let the practitioner respect this dignity and guard his lips from petty criticism or derogatory remarks. The physician who insists on good care for his patients will get it if his manner and actions do not belie his words. And the patient will then praise both the nurse and the doctor. The hospital is a ponderous machine. It will run better for a little oil on the gears.

—ALLAN J. RYAN, M.D.

J. M. SOC. NEW JERSEY, 55:591,
(Nov.) 1958



HAPPY NEW YEAR!

In wishing our readers a Happy New Year, we feel that we can't suggest that they begin taking the small amount of contentment and repose that is occasionally permitted to members of our profession. There are difficulties to be thought through and actions to be decided upon if the private practice of medicine is to remain a part of the American way of life.

One of the things that doctors must do as they never have done it before is to unite in supporting and improving Blue Shield. Our prepayment plan, along with those of commercial insurance carriers, must be adapted so as to enlist as policyholders everyone who is capable of paying all or even most of his own way. To do this, we must provide coverage for the present over-65 group; we must immediately find ways of protecting the declining years of people now in the prime of life, since constantly increasing numbers of them will survive to their years of retirement; and we must protect both Blue Shield and commercial insurance companies against an overutilization that could price hospital-surgical coverage beyond the reach of many wage-earners. Some thought-provoking ideas on these subjects are to be found in Mr. E. J. Faulkner's article in this issue of the JOURNAL.

This is a legislature year in Iowa, and to voice our attitudes on bills in which we are interested—ones in which the health and well being of all Iowans are concerned—all of us must take time to seek out and talk with our respective legislators and state senators. A list of those men is to be found elsewhere in this issue.

Every new year marks the beginning of a new session of Congress, but in this particular January there are several new congressmen from Iowa. Each of us should make it his business to meet his representative in Congress and to exchange views with him on the meaning of the election that took place two months ago. He may not have made up his mind—indeed few people have done so—about whether the vote reflected a popular desire for more federal spending or less, and about whether most people fear recession more than inflation.

Doctors should ponder the ways in which more and more people can be persuaded to avail themselves of preventive medicine. In Chicago during 1957 and in Detroit during 1958, it became pain-

fully obvious that Salk vaccine inoculation had reached far too few people. But for the Grace of God, the same disasters could have struck hundreds of other cities or even rural communities. Early detection is life-saving in tuberculosis, cancer and several other diseases, but too few people are being examined promptly enough. Is it possible for us to fit a really efficient program of prophylaxis into the framework of private medical practice, or must we leave an ever greater share of such work to public health agencies?

Thus, along with our New Year's greeting, we want to ask that Iowa doctors rededicate themselves to the solution of some serious socio-medical problems. The coming 12 months won't be ones during which they can afford to rest. Indeed, if any of them are subject to attacks of complacency, we prescribe a perusal of Richard Carter's new book *THE DOCTOR'S BUSINESS*. Though in it, as the editors of the *NEW ENGLAND JOURNAL OF MEDICINE* have said: "All the human faults that embarrass every honest physician . . . are tossed over and over again, like a green salad, until a quantity of the dressing covers each leaf, [and] unfortunately there is more vinegar than oil in the mixture,"* the book is certain to arouse every M.D. who reads it to the lateness of the hour and to the necessity of his thinking and working to protect all that he holds dear.

* *NEW ENGLAND J. MED.*, 259:1135-1136 (Dec. 4), 1958.

BLUE SHIELD BOARD

In the article "The Blue Shield Board and How It Grew" in the December, 1958, JOURNAL, an extremely valuable board member, Dr. Richard F. Birge, was inexplicably omitted from the list of ISMS representatives. No doubt each of our readers is aware that Dr. Birge is a Des Moines pathologist and has been secretary of the Iowa State Medical Society for the past 4½ years. He is deeply interested in the problems of Blue Shield, he devotes a great deal of his time to the board's

Can you name the men who represent you in the General Assembly of Iowa and in the Congress of the United States? Write their names below, and then check the accuracy of your answers by turning to the lists on pages 46-47.

State Senator

State Representative

U. S. Senators

Representative in Congress





Tetracycline with Citric Acid **LEDERLE**

LE LABORATORIES, a Division of AMERICAN CYANAMID COMPANY, Pearl River, New York



work, and the plan would have difficulty in getting along without him.

In that same article, though Dr. Earl Lowry's name was spelled correctly once, it was misspelled in two other instances. And the name of Mr. A. O. Lothringer was misspelled in each of two instances. We are very sorry that those errors occurred.

FEDERAL HEALTH BUDGET, 1959

The federal government's medical activities are on a massive scale, and they continue to grow. For all health programs during the fiscal year from July 1, 1958, to June 30, 1959, Uncle Sam is spending about 62.6 per cent more than he did five years ago and 13.5 per cent more than during the previous year. Programs in 22 separate agencies and departments range from cancer research to federal employee clinics. The total cost is \$2,800,000,000, or \$344,700,000 more than last year. Right now, the agencies and the Bureau of the Budget are working on requests to be presented to Congress, and there is little question that the bills finally enacted will set another new high for medical spending.

The source of our figures, as it has been in each of the preceding five of these annual reports, is the AMA Washington Office. The tabulation does not include payments to disabled persons which the federal government finances entirely or in part. Such beneficiaries now total nearly 6,000,000, a 15 per cent increase over last year, and money paid them has increased to \$4,750,000,000, more than 40 per cent over last year's figure.

	1959	1958
Department of Health, Education & Welfare		
Division of Hospital Facilities		
Hill-Burton Original Program	\$ 150,000,000	\$ 99,000,000
Medical Facilities, Category Program	35,000,000	21,000,000
Hill-Burton Administrative Expenses	1,600,000	1,450,000
Research	1,200,000	1,200,000
National Institute of Health		
National Cancer Institute	75,268,000	56,402,000
National Heart Institute	45,613,000	35,936,000
Mental Health Institute	52,419,000	39,217,000
Arthritis & Metabolic Diseases Institute	31,215,000	20,385,000
Neurological Diseases & Blindness Institute	29,403,000	21,387,000
Allergy & Infectious Diseases Institute	24,071,000	17,400,000
Dental Health Institute	7,420,000	6,430,000
General Funds (NIH)	28,974,000	14,026,000
Laboratory Research Construction (NIH)	30,000,000	30,000,000
Water Pollution Control	45,000,000	47,500,000
Hospitals & Medical Care	48,454,000	44,399,000
Indian Health Activities	44,597,000	43,230,300
Assistance to States—General	22,889,000	22,592,000
Sanitary Engineering Activities	12,815,000	12,640,000
Tuberculosis Control	6,386,000	7,000,000
Communicable Disease Activities	8,300,000	6,250,000
Office of Surgeon General	5,260,000	5,100,000
Venereal Disease Control	5,400,000	4,415,000
Foreign Quarantine Service	4,108,000	3,876,000
Alaska Health and Sanitation Programs	8,665,000	2,165,000
National Library of Medicine	8,365,000	1,450,000
Reimbursable Health Programs for Other Governmental		

Agencies	487,000	475,000
Freedman's Hospital	2,975,000	3,000,000
Howard University	1,022,000	1,136,000
St. Elizabeth's Hospital	17,082,000	15,904,500
Bureau of Public Assistance (med. payments)	240,000,000	150,000,000
Office of Vocational Rehabilitation	57,800,000	50,830,000
Children's Bureau	32,300,000	32,300,000
Federal Surplus Property		
Doracion Program	18,319,806	15,200,000
Food & Drug Administration	9,800,000	9,300,000
U. S. Office of Education	4,000,000	4,000,000
TOTALS	\$ 1,116,207,806	\$ 849,395,800
Veterans Administration		
In-Patient Care in VA Hospitals	\$ 675,298,000	\$ 657,071,000
Out-Patient Care	75,399,000	79,000,000
Modernization and Replacement Construction	16,595,000	42,500,000
Domiciliary Care	31,812,000	31,490,000
Contract Hospitalization	13,557,000	13,389,000
Medical Administration	7,175,000	7,862,000
Medical Research	16,344,000	11,344,000
Alterations, Improvements and Repairs	2,700,000	2,028,000
Supply Depot Operations	2,055,000	1,790,000
Medical Education and Training	1,339,000	1,400,000
Medical Care—Philippine Veterans	1,250,000	1,500,000
TOTALS	\$ 843,524,000	\$ 849,374,000
Department of Defense		
Army Medical Services	\$ 295,000,000	\$ 270,700,000
Air Force Medical Services	221,000,000	211,400,000
Naval Medical Services	235,000,000	220,100,000
Office, Asst. Sec. of Defense (Health and Medical)	115,000	105,000
TOTALS	\$ 751,115,000	\$ 702,305,000
Atomic Energy Commission	\$ 45,462,000	\$ 40,085,000
International Cooperation Administration		
Technical Cooperation Health Programs	\$ 14,000,000	\$ 14,000,000
Malaria Eradication Programs	25,600,000	23,300,000
TOTALS	\$ 39,600,000	\$ 37,300,000
Department of State		
United Nations Children's Fund	\$ 11,000,000	\$ 10,000,000
World Health Organization	7,424,380	4,200,110
Pan American Sanitary Bureau	1,914,000	1,518,000
Health Program for Overseas Employees	1,300,000	(new category)
TOTALS	\$ 21,638,380	\$ 15,718,110
National Science Foundation	\$ 19,575,000	\$ 7,500,000
Office of Civil and Defense Mobilization	13,617,000	3,177,000
Federal Employees' Health Programs	11,000,000	10,000,000
Department of Labor		
Bureau of Employees' Compensation	8,200,000	7,500,000
Bureau of Labor Standards	627,000	569,476
TOTALS	\$ 8,827,000	\$ 8,069,476
Panama Canal Zone Company and Government	\$ 3,959,900	\$ 5,988,300
Department of Treasury	3,854,500	3,837,850
Department of Justice	2,105,000	1,796,000
District of Columbia	2,000,000	3,700,000
Federal Trade Commission	1,600,000	1,500,000
Department of Commerce		
Civil Aeronautics Administration	600,000	385,000
National Bureau of Standards	612,400	526,300
TOTALS	\$ 1,212,400	\$ 911,300
Civil Service Commission	\$ 426,000	\$ 387,000
President's Committee for Employment of Physically Handicapped	214,700	182,575
Small Business Administration	150,000	70,000
Department of the Interior	149,000	154,950
National Advisory Committee to Selective Service	19,000	19,000
Office of Attending Physician to Congress	13,145	12,145
GRAND TOTALS	\$2,886,260,831	\$2,541,483,506

TAX-EXEMPT EXPENSES

Now that the end of the year has passed, all physicians will need to compile lists of their professional expenses in preparation for making reports to that most suspicious of all men, the Director of Internal Revenue. It is interesting, by the way, that there was a title change a few years ago, from *Collector* to *Director*, perhaps for much the same reason that *undertaker* became *funeral director*.

With the help of the following table, doctors may secure final approval of their figures, but it seems that their being required to undergo an annual audit is almost inevitable. It has always been an enigma why members of the medical profession are singled out for this onerous chore, and we wonder what lawyers would have to say if as many of them were so chosen.

The following figures, we have reason to believe, are the Internal Revenue Bureau's own average percentages of expenses for physicians having gross incomes between \$40,000 and \$50,000 per year. Thus, it is probable that doctors whose breakdowns approximate this one will have a minimum of difficulty.

While we are in the habit of extending greetings, we want to wish our readers the very best of luck on April 15, the deadline for filing income-tax returns.

Per Cent of Gross Income		
Outside labor	1.61	
Supplies	10.92	
Gross wages*	12.91	
Repair and maintenance .....	.62	
Public relations	1.30	
Automobile	1.54	
Administration and legal	1.16	
Other expense	7.78	
Controllable Expense		37.84
Rent**	4.25	
Utilities	2.28	
Insurance .....	.99	
Tax and license	1.08	
Interest .....	.40	
Depreciation	2.20	
Fixed Expense		11.20
Total Expense		49.04
Net Profit		50.96

* Does not include wages for "proprietor."
** Adjusted to reflect exclusion of owned premises.

Attend the
1959 ISMS ANNUAL MEETING
April 19-22
Des Moines

HOSPITAL VISITING HOURS

Once again, through the cooperation of the major hospitals in Des Moines and the Polk County Medical Society, an educational program has been launched to control visiting hours. It is certain to bring protracted harrassment to hospital administrators and nursing superintendents, from the patients' relatives and pseudo-relatives, from the representatives of religious and political organizations and from busybodies, all of whom will offer a multitude of reasons why visiting hours should be suspended for their special benefit. But the new regulations are essential to the protection of patients and to the efficiency of medical care.

To the physician making his rounds, nothing is more unwelcome than to find hospital elevators crowded not only with food carts or garbage pails but by a number of visitors as well. And when he has arrived at the patients' rooms, he is handicapped if visitors are traipsing through the halls and reposing indiscriminately on the patients' beds and on all of the other flat surfaces in their rooms. This is bad enough if the visitors are close relatives of the patients, but frequently they are not.

In addition, consider the problems of the nurses whose time is taken up in answering questions and, generally, in acting as traffic policemen. This abuse also frequently tires patients unnecessarily and introduces an unnecessary number and variety of bacteria into their environment.

The revised rules will permit only the husband to visit an obstetrical patient, they will limit other patients' visitors to two at a time and require that they sit only in the chairs provided for them, they will ban visits from children under 14 years of age, they will forbid visitors' wandering from ward to ward, and they will permit no visits at other than the posted visiting hours.

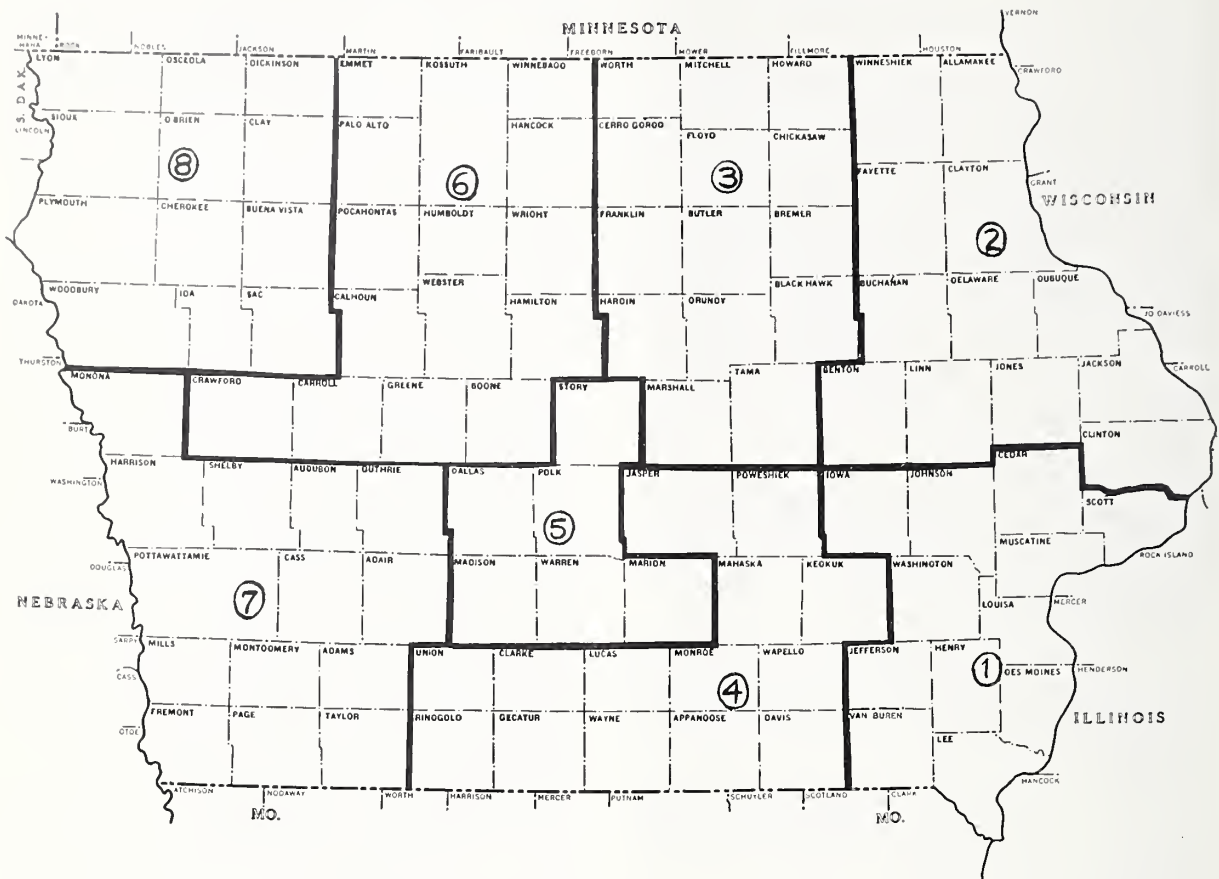
We trust that this educational campaign will succeed, through unity of purpose, where previous attempts have failed. An attractive brochure has been prepared to explain these actions of the hospital administrators and the medical profession.

DR. BEAN ON BOARD OF NATIONAL LIBRARY OF MEDICINE

Dr. William B. Bean, professor and head of the Department of Internal Medicine at the S.U.I. College of Medicine, is one of two doctors who have been newly appointed to the Board of Regents of the National Library of Medicine. The other is Dr. William Stadel, director of the San Diego Department of Medical Institutions.

At their first fall meeting, the Regents discussed plans for next spring's ground breaking for the \$7,000,000 new library building which is set for completion in 1961.

Iowa Delegation in Congress



U. S. CONGRESSMEN FROM IOWA

- First Congressional District—Fred Schwengel (R) , Davenport (Scott)
- Second Congressional District—Leonard G. Wolf (D) , Elkader (Clayton)
- Third Congressional District—H. R. Gross (R) , Waterloo (Black Hawk)
- Fourth Congressional District—Steven V. Carter (D) , Leon (Decatur)
- Fifth Congressional District—Neal E. Smith (D) , R.F.D., Altoona (Polk)
- Sixth Congressional District—Merwin Coad (D) , Boone (Boone)
- Seventh Congressional District—Ben F. Jensen (R) , Exira (Audubon)
- Eighth Congressional District—Charles B. Hoeven (R) , Alton (Sioux)

U. S. SENATORS FROM IOWA

Bourke B. Hickenlooper (R) Cedar Rapids
 Thomas E. Martin (R) Iowa City

Letters to congressmen should be addressed to the House Office Building, Washington 25, D. C., and letters to senators should be addressed to the Senate Office Building, Washington 25, D. C.

1959 IOWA LEGISLATURE

County	Senatorial District	Senator	Representative
Adair	16 (with Madison)	Raymond R. Gillespie (D) Dexter	Eugene Halling (R) Orient
Adams	6 (with Taylor)	Francis A. Turner (R) Corning	James E. Briles (R) Corning
Allamakee	40 (with Fayette)	George L. Scott (R) West Union	Elmer A. Hoth (R) Postville
Allamoose	3 (with Davis)	Gene L. Hoffman (D) West Grove	Kenneth E. Owen (D) Centerville
Audubon	17 (with Dallas, Guthrie)	G. W. Prince (R) Guthrie Center	Harvey W. Johnson (R) Exira
Benton	45 (with Grundy, Tama)	Lawrence Putney (R) Gladbrook	Jack Milroy (R) Vinton
Black Hawk	38	Mel Wolfe (D) Waterloo	Bernard R. Balch (R) Waterloo
			Robert D. Fulton (D) Waterloo
Boone	31 (with Story)	Carl H. Ringgenberg (R) Ames	Raymond Eveland (D) Kelley
Bremer	39 (with Butler, Franklin)	J. Kendall Lyles (R) Plainfield	Clarence Christophel (R) Waverly
Buchanan	33 (with Delaware)	Irving D. Long (R) Manchester	R. P. Harrington (D) Independence
Buena Vista	50 (with Humboldt, Pocahontas)	Guy G. Butler (R) Rolfe	Fred M. Jarvis (D) Alta
Butler	39 (with Bremer, Franklin)	J. Kendall Lyles (R) Plainfield	Charles E. Grassley (R) New Hartford
Calhoun	27 (with Webster)	Joe Coleman (D) Clare	Dewey Summa (D) Rockwell City
Carroll	48 (with Greene, Sac)	Peter F. Hansen (D) Manning	John A. Baumhover (D) Carroll
Cass	18 (with Shelby)	John D. Shoeman (R) Atlantic	Lester L. Kluever (R) Atlantic
Cedar	23 (with Jackson, Jones)	Earl Elijah (R) Clarence	A. L. Mensing (R) Lowden
Cerro Gordo	43 (with Hancock)	Walter E. Edelen (D) Garner	William McArthur (D) Mason City
Cherokee	46 (with Ida, Plymouth)	Laurence M. Boothby (R) Cleghorn	George P. Rapson (R) Cherokee
Chickasaw	44 (with Floyd)	Robert R. Rigler (R) New Hampton	M. A. Cagley (D) Ionia
Clarke	11 (with Warren)	J. Louis Fisher (R) Osceola	Stanley Watts (D) Murray
Clay	47 (with Dickinson, O'Brien)	(Special election, December 30, 1958)	Merle W. Hagedorn (D) Royal
Clayton	36	John J. O'Connor (D) Strawberry Point	K. W. Fuelling (D) Farmersburg
Clinton	22	David O. Shaff (R) Camanche	John Camp (R) Bryant
			Lawrence D. Carstensen (R) Clinton
Crawford	34 (with Harrison, Monona)	R. G. Moore (D) Dunlap	Harold Houston (D) Dow City
Dallas	17 (with Audubon, Guthrie)	G. W. Prince (R) Guthrie Center	Don G. Allen, Jr. (R) Adel
Davis	3 (with Appanoose)	Gene L. Hoffman (D) West Grove	Royce Gordy (D) Bloomfield
Decatur	5 (with Ringgold, Union)	X. T. Prentis (R) Mount Ayr	Franklin S. Main (D) Lamoni
Delaware	33 (with Buchanan)	Irving D. Long (R) Manchester	James E. Patton (R) Manchester
Des Moines	9	Carl Hoschek (D) Burlington	Robert R. Dodds (D) Danville
Dickinson	47 (with Clay, O'Brien)	(Special election, December 30, 1958)	Charles Weik (D) Spirit Lake
Dubuque	35	Andrew G. Frommelt (D) Dubuque	John L. Duffy (D) Dubuque
			Thomas P. O'Toole (D) Dubuque
Emmet	49 (with Kossuth, Palo Alto)	Duane E. Dewel (R) Algona	Niels J. Nielsen (D) Ringsted
Fayette	40 (with Allamakee)	George L. Scott (R) West Union	Donald L. Kimball (R) Oelwein
Floyd	44 (with Chickasaw)	Robert R. Rigler (R) New Hampton	E. Wayne Shaw (R) Charles City
Franklin	39 (with Bremer, Butler)	J. Kendall Lyles (R) Plainfield	Floyd P. Edgington (R) Sheffield
Fremont	7 (with Page)	Frank Hoxie (R) Shenandoah	Fred L. Johnson (D) Hamburg
Greene	48 (with Carroll, Sac)	Peter F. Hansen (D) Manning	Raymond Fisher (R) Grand Junction
Grundy	45 (with Benton, Tama)	Lawrence Putney (R) Gladbrook	Harold O. Fischer (R) Wellsburg
Guthrie	17 (with Audubon, Dallas)	G. W. Price (R) Guthrie Center	S. E. Robinson (R) Guthrie Center
Hamilton	37 (with Hardin, Wright)	John A. Walker (R) Williams	Robert Naden (R) Webster City
Hancock	43 (with Cerro Gordo)	Walter E. Edelen (D) Garner	Oren H. Johnson (D) Kanawha
Hardin	37 (with Hamilton, Wright)	John A. Walker (R) Williams	Paul M. Walter (R) Union
Harrison	34 (with Crawford, Monona)	R. G. Moore (D) Dunlap	W. E. Darrington (R) Persia
Henry	10 (with Washington)	Clifford M. Vance (R) Mount Pleasant	John B. Rockwell (R) Mount Pleasant
Howard	42 (with Winneshiek)	Lynn Potter (D) Cresco	Roy W. Frank (R) Cresco
Humboldt	50 (with Buena Vista, Pocahontas)	Guy G. Butler (R) Rolfe	Fred W. Hall (D) Humboldt
Ida	46 (with Cherokee, Plymouth)	Laurence M. Boothby (R) Cleghorn	Clarence E. Lohff (D) Holstein
Iowa	25 (with Johnson)	D. C. Nolan (R) Iowa City	William J. Coffman (R) North English
Jackson	23 (with Cedar, Jones)	Earl Elijah (R) Clarence	Howard Tabor (D) Baldwin
Jasper	29	Eugene M. Hill (D) Newton	Gail A. Rusk (D) Newton
Jefferson	2 (with Van Buren)	Norval Evans (R) Fairfield	Le Roy Chalupa (R) Pleasant Plain
Johnson	25 (with Iowa)	D. C. Nolan (R) Iowa City	Scott Swisher (D) Iowa City
Jones	23 (with Cedar, Jackson)	Earl Elijah (R) Clarence	Russell Eldred (D) Anamosa
Keokuk	12 (with Poweshiek)	C. Edwin Gilmour (D) Grinnell	Keith Dunton (D) Thornburg
Kossuth	49 (with Emmet, Palo Alto)	Duane E. Dewel (R) Algona	Casey Loss (D) Algona
Lee	1	Charles F. Eppers (D) Keokuk	Adrian Brinck (D) West Point
Linn	26	Frank C. Byers (R) Marion	Frank L. Martin (D) Cedar Rapids
			Robert F. Wilson (D) Cedar Rapids
Louisa	20 (with Muscatine)	George W. Weber (R) Columbus Junction	Fred E. Wier (R) Letts
Lucas	4 (with Wayne)	W. C. Stuart (R) Chariton	Neal Pierce (R) Russell
Lyon	24 (with Osceola, Sioux)	J. T. Dykhouse (R) Rock Rapids	A. C. Hanson (R) Inwood
Madison	16 (with Adair)	Raymond R. Gillespie (D) Dexter	Joseph B. Platt (R) Winterset
Mahaska	14	Carroll F. McCurdy (D) Oskaloosa	John Gray (R) Oskaloosa
Marion	15 (with Monroe)	Carroll Price (R) Knoxville	Paul W. Eggers (D) Knoxville
Marshall	28	Howard C. Buck (R) Melbourne	John L. Mowry (R) Marshalltown
Mills	8 (with Montgomery)	William H. Harbor (R) Henderson	Roscoe E. Greenwood (R) Emerson
Mitchell	41 (with Winnebago, Worth)	Jacob Grimstead (R) Lake Mills	Charles R. Burtch (R) Osage
Monona	34 (with Crawford, Harrison)	R. G. Moore (D) Dunlap	Eloy Maule (D) Onawa
Monroe	15 (with Marion)	Carroll Price (R) Knoxville	Katherine M. Falvey (D) Albia
Montgomery	8 (with Mills)	William H. Harbor (R) Henderson	Conrad Ossian (R) Stanton
Muscatine	20 (with Louisa)	George W. Weber (R) Columbus Junction	David M. Stanley (R) Muscatine
O'Brien	47 (with Clay, Dickinson)	(Special election, December 30, 1958)	Marvin W. Smith (R) Paulina
Osceola	24 (with Lyon, Sioux)	J. T. Dykhouse (R) Rock Rapids	W. J. Johannes (D) Ashton
Page	7 (with Fremont)	Frank Hoxie (R) Shenandoah	Vern Lisle (R) Clarinda
Palo Alto	49 (with Emmet, Kossuth)	Duane E. Dewel (R) Algona	John J. Brown (D) Emmetshurg
Plymouth	46 (with Cherokee, Ida)	Laurence M. Boothby (R) Cleghorn	J. Henry Lucken (R) Akron
Pocahontas	50 (with Buena Vista, Humboldt)	Guy G. Butler (R) Rolfe	William Bohi (D) Havelock
Polk	30	George E. O'Malley (D) Des Moines	John E. Andrews (D) Des Moines
			Howard C. Reppert, Jr., (D) Des Moines
Pottawattamie	19	Jim O. Henry (R) Carson	Gilbert E. Klefstad (D) Council Bluffs
			Jack A. Rooney (D) Council Bluffs
Poweshiek	12 (with Keokuk)	C. Edwin Gilmour (D) Grinnell	George L. Paul (R) Brooklyn
Ringgold	5 (with Decatur, Union)	X. T. Prentis (R) Mount Ayr	Lester Sickels (R) Kellerton
Sac	48 (with Carroll, Greene)	Peter F. Hansen (D) Manning	J. D. Currie (R) Schaller
Scott	21	Jack Schroeder (R) Davenport	Riley Dietz (R) Walcott
			Ken Stringer (R) Davenport
Shelby	18 (with Cass)	John D. Shoeman (R) Atlantic	Peter Steenhisen (D) Irwin
Sioux	24 (with Lyon, Osceola)	J. T. Dykhouse (R) Rock Rapids	Elmer H. Den Herder (R) Sioux Center
Story	31 (with Boone)	Carl H. Ringgenberg (R) Ames	Ray C. Cunningham (R) Ames
Tama	45 (with Benton, Grundy)	Lawrence Putney (R) Gladbrook	Neil E. Johns (R) Toledo
Taylor	6 (with Adams)	Francis A. Turner (R) Corning	Ivan Wells (D) Bedford
Union	5 (with Decatur, Ringgold)	X. T. Prentis (R) Mount Ayr	Robert E. Maggett (R) Creston
Van Buren	2 (with Jefferson)	Norval Evans (R) Fairfield	T. O. Nutt (R) Douds
Wapello	13	Jake B. Mincks (D) Ottumwa	W. Dean Aubrey (D) Ottumwa
			Robert E. Conner (D) Ottumwa
Warren	11 (with Clarke)	J. Louis Fisher (R) Osceola	Carl Hirsch (R) Indianola
Washington	10 (with Henry)	Clifford M. Vance (R) Mount Pleasant	Richard L. Stephens (R) Ainsworth
Wayne	4 (with Lucas)	W. C. Stuart (R) Chariton	Reed Casey (D) Corydon
Webster	27 (with Calhoun)	Joe Coleman (D) Clare	Willard Freed (D) Gowrie
Winnebago	41 (with Mitchell, Worth)	Jacob Grimstead (R) Lake Mills	Henry C. Nelson (R) Forest City
Winneshiek	42 (with Howard)	Lynn Potter (D) Cresco	Hilman H. Sersland (R) Decorah
Woodbury	32	Jack Miller (R) Sioux City	Donald V. Doyle (D) Sioux City
			John M. Naughton (D) Sergeant Bluff
Worth	41 (with Mitchell, Winnebago)	Jacob Grimstead (R) Lake Mills	Harold Mueller (D) Manly
Wright	37 (with Hardin, Hamilton)	John A. Walker (R) Williams	Clark H. McNeal (R) Belmond

President's Page

In Minneapolis last month, the AMA House of Delegates spent a great deal of its time considering the increasing third-party participation in the practice of medicine.

It was the consensus of the delegates that arrangements for providing medical services should be made with the guidance of doctors, and that the care of each patient must remain the responsibility of that patient's own physician.

In our beloved land, the people must remain independent. Thus, individual physicians should advise their patients regarding the availability of voluntary insurance and encourage them to prize their long-established right to choose the doctor who is to attend them.

In this way, physicians can help their fellow citizens hold fast to their heritage of freedom and keep American medical care the finest in the world.

Notes & Abstract

President

Dr. Coffin Is AMA General Practitioner of the Year



Dr. Coffin's daughters, Mrs. Floyd Millen (left) and Mrs. William Hols, both of Farmington, came to Minneapolis to congratulate him.

Dr. Lonnie A. Coffin, of Farmington, Iowa, was named AMA General Practitioner for 1958 by the AMA House of Delegates during its meeting in Minneapolis on December 2.

Dr. Coffin is well known to practically every doctor in Iowa, for he has been a leader in organized medicine at the state level for many years. After serving for several years as a trustee of the Iowa State Medical Society, he was its president in 1955-1956, and was chosen as Iowa General Practitioner of the Year last April. Drake University named him an outstanding alumnus two or three years ago.

Though he was born on a farm in Clark County, Missouri, he has been almost a life-long resident of Farmington, for his parents brought him there when he was a boy of five years. He took his M.D. degree at Drake University, Des Moines, in 1913, interned during the following year at Iowa Methodist Hospital there, and except for two years when he was with the U. S. Army Medical Corps in France during World War I, he has practiced medicine in Farmington ever since.

As a matter of fact, whether the ISMS and the AMA knew it or not, in designating Dr. Coffin as an ideal general practitioner, they were acknowledging the excellence of work in which the late Mrs. Coffin had a very considerable share. The Coffins worked as a team.

His town has always been happy to share in his triumphs. On returning home after he was elected president of ISMS, Dr. and Mrs. Coffin were met at the Farmington River bridge by a huge crowd of friends, and they were escorted from there to the flower-decorated high school gymnasium for a reception. Similarly, when he returned from Minneapolis last month after being named AMA General Practitioner of the Year, a large crowd of people from Farmington were at the Fort Madison airport as his plane touched ground.

Dr. Coffin refers to himself as "an ordinary country doctor," but one of his fellow townsmen has said: "There might be doctors who have done just as well or just as much—but none who has done any better."

The AMA House of Delegates in Minneapolis

F. J. L. BLASINGAME, M.D. AMA EXECUTIVE VICE-PRESIDENT

HEALTH CARE of the aged, the report of the AMA Commission on Medical Care Plans, osteopathy, expansion of medical education facilities, the Association's administrative changes, the report of the Committee to Study AMA Objectives and Basic Programs, and voluntary health organization fund raising were among the wide variety of issues considered by the House of Delegates at the American Medical Association's Twelfth Clinical Meeting held December 2-5, 1958, in Minneapolis.

Speaking at the Tuesday opening session of the House, Dr. Gunnar Gundersen of La Crosse, Wis., AMA President, called upon the medical profession to exert leadership and imagination in meeting the problems of these changing times. Urging practical actions to solve medico-economic challenges, Dr. Gundersen declared that "the time has passed for policies based on generalities, platitudes and flag-waving." He also suggested that the Association offer support and cooperation to proposals for an International Medical Year.

Governor Orville L. Freeman of Minnesota, who also addressed the opening session, asked for "the help of the leaders of the medical profession in working out a program that will most adequately meet the needs of our older citizens for health care and services of the highest quality."

With half a day still to go, total registration Thursday evening had reached 4,880, including 2,870 physicians.

HEALTH CARE OF THE AGED

Responding to Dr. Gundersen's call for action and Gov. Freeman's plea for help in meeting the health care needs of the aged, the House of Delegates adopted the following proposal submitted by the Council on Medical Service and endorsed by the Board of Trustees:

"For persons over 65 years of age with reduced incomes and very modest resources, it is necessary immediately to develop further the voluntary health insurance or prepayment plans in a way that would be acceptable both to the recipients and the medical profession. The medical profession must continue to assert its leadership and responsibility for assuring adequate medical care for this group of our citizens.

"Therefore, the Council on Medical Service recommends to the House of Delegates the adoption of the following proposal: That the American Medical Association, the constituent and component medical societies, as well as physicians every-

where, expedite the development of an effective voluntary health insurance or prepayment program for the group over 65 with modest resources or low family income; that physicians agree to accept a level of compensation for medical services rendered to this group which will permit the development of such insurance and prepayment plans at a reduced premium rate."

In order to effect the immediate implementation of such a program, the House directed that copies of the proposal be distributed to medical society approved plans, including Blue Shield and private insurance programs, requesting their cooperation.

COMMISSION ON MEDICAL CARE PLANS

The long-awaited report of the Commission on Medical Care Plans, appointed at the 1954 Clinical Meeting in Miami, was discussed for two hours at a reference committee hearing, but the House decided to defer action until the June, 1959, meeting. In so doing, the delegates adopted this statement:

"We respectfully suggest to the constituent associations reviewing the report in the interim, that their attitude regarding the report will be clarified if they arrive at some decisions in regard to the following basic points:

1. *Free Choice of Physician*—Acknowledging the importance of free choice of physician, is this concept to be considered a fundamental principle, incontrovertible, unalterable, and essential to good medical care without qualification?

2. *Closed Panel Systems*—What is or will be your attitude regarding physician participation in those systems of medical care which restrict free choice of physician?

"These suggestions acknowledge that the policy of the American Medical Association to encourage and support the highest quality of medical care for all patients remains unchanged. They question, however, whether attitudes toward the free choice of physician and the closed panel system may be undergoing evolutionary change."

The House recommended that the Board of Trustees invite the constituent associations to forward their replies to these questions to the Executive Vice President 60 days in advance of the June, 1959, meeting.

OSTEOPATHY

Considerable discussion centered on a resolution which would have recognized that constituent medical associations have the right to establish the

relationship of the medical profession to the osteopathic profession within their respective states. The House decided, however, that the resolution in question did not offer the appropriate solution to the osteopathic problem. Instead, the delegates requested the Judicial Council to review past pronouncements of the House on osteopathy and the status of the laws of the various states in this regard. The Council was asked to present its report and recommendations at the June, 1959, meeting. The House "noted with favor that the American Osteopathic Association has amended its objectives as stated in its constitution by deleting reference to the cultism of Andrew J. Still."

MEDICAL EDUCATION

The House approved a statement by the Council on Medical Education and Hospitals supporting the development of additional facilities for basic medical education, and it urged the entire profession to give that policy strong support in order to correct misinterpretations of the Association's viewpoint regarding the supply of physicians.

"American medicine," the statement points out, "fully recognizes the needs being brought about by the increasing population, social and economic trends, and the changing dimensions of medical knowledge and its application." Urging careful analysis of those needs, the statement says that existing medical schools should consider the possibility of increasing their enrollments and developing new facilities. It also declares that American medicine has the responsibility to encourage the creation of new four-year medical schools and two-year basic science programs by institutions of higher education which can provide the desirable setting.

AMA ADMINISTRATIVE STRUCTURE

A Board of Trustees report on the administrative structure of the Association was approved by the House, which termed the reorganization of the headquarters staff as a long and important step in the right direction. The report informed the House that the Chicago staff has been divided into the following seven divisions: Business Division, Law Division, Communications Division, Field Division, Division of Scientific Publications, Division of Socio-Economic Activities and Division of Scientific Activities. The latter two are still in the process of development and are temporarily under the direction of the Assistant Executive Vice President. The Board also reported that the Committee on Legislation has been renamed the Council on Legislative Activities, with the Director of the Law Division as Council Secretary. This new council will undertake an enlarged, strengthened legislative program, closely coordinated with the activities of the new field staff and the Washington Office. The latter also has been reorganized, with over-all direction coming from Chicago.

AMA OBJECTIVES AND BASIC PROGRAMS

The House received and commended the report of the Committee to Study AMA Objectives and Basic Programs, which it said may be a significant milepost in the Association's history. In approving one of the committee's recommendations, the House referred to the Council on Constitution and Bylaws the following suggested amendment of Article II of the Constitution: "The objectives of the Association are to promote the science and art of medicine and the betterment of public health and an understanding of the socio-economic conditions which will facilitate the attainment of these objectives."

The House also recommended that the Board of Trustees establish a mechanism which will assume the responsibility for promoting active liaison with each national medical society. "In the scientific fields," the House declared, "the role of the AMA should be primarily that of leadership, but every endeavor should be made to bring about coordination of the special fields of scientific interest of the other national medical organizations." The delegates also approved a recommendation that the Board of Trustees give serious consideration to opening the publications of the Association to a free and open discussion of socio-economic problems applicable to medicine.

FUND RAISING

Once again considering fund raising problems which have arisen since development of the concept of united community effort, the House passed a resolution which pointed out that the action taken last June in San Francisco has been interpreted by some as disapproving the inclusion of voluntary health agencies in United Fund drives. It then stated that "the American Medical Association neither approves nor disapproves of the inclusion of voluntary health agencies in United Fund drives." The resolution also requested the Board of Trustees to arrange a top-level conference with the voluntary health agencies, the United Funds and other parties interested in the raising of funds for health causes, with a view toward resolving misinterpretations and other difficulties in this area.

MISCELLANEOUS ACTIONS

In dealing with a wide variety of other subjects, the House also:

Took notice of the recent restrictive changes in the *Medicare* program; expressed regret at the substitution of federal facilities for private care in the areas mentioned, and urged the Association to encourage the reestablishment of services under the free choice principle to accomplish the original intent of the act;

Recommended that the Social Security Act be amended by Congress to permit states to combine the present four *Public Assistance* medical programs into a single medical program, administered

by a single agency and making available uniformity of services to all eligible Public Assistance recipients in the state;

Authorized the Council on Medical Service to sponsor at the earliest practicable date a *Congress on Prepaid Health Insurance*;

Approved a plan to develop "*Buyers' Guides*" which will be sent to physicians to help their patients analyze the merits of available health insurance programs;

Approved a Bylaw amendment which will allow *dues exemptions* for interns and residents serving in training programs approved by the Council on Medical Education and Hospitals;

Called to the attention of all individuals or institutions responsible for *intern and resident* training that medical services provided to patients in hospitals are the responsibility of duly licensed physicians;

Encouraged the voluntary registration of the *paramedical personnel* who assist physicians, but opposed the extension of governmental licensure and governmental registration at this time;

Heartily approved and lauded the purpose, content and format of THE AMA NEWS and recommended continuance of the publication under its present and established policies;

Agreed with the Committee on Medical Practices that *relative value studies* should be conducted by each constituent medical association but not on a national or regional basis by the AMA;

Urged each constituent society to establish a committee on *rehabilitation* to carry out activities recommended by the Board of Trustees;

Called for continued activity at all levels to stimulate the development of effective *poliomyelitis inoculation programs*;

Suggested that the Association take immediate steps toward developing a plan whereby reserve medical units and individuals not immediately involved in military operations could be used to supplement *civil defense* operations, and

Expressed gratitude and appreciation for the long years of devoted service by *Dr. Austin Smith*, who has resigned as Editor of THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

At the opening session, six state medical societies contributed a total of almost \$250,000 to the American Medical Education Foundation. The gifts were: California, \$150,305.75; Indiana, \$35,110; New Jersey, \$25,000; New York, \$19,608; Utah, \$9,977.50 and Arizona, \$8,657.50. In addition, the American Medical Association announced a contribution of \$100,000 to the Foundation.

It also was announced on the opening day of the meeting that Dr. W. Linwood Ball of Richmond, Va., AMA Vice President, had been appointed to the Board of Trustees to fill the vacancy caused by the recent death of Dr. Warren Furey of Chicago. Dr. Ball, who will serve on the Board until

next June, said he will not be a candidate to succeed himself.

POSTGRADUATE COURSES IN PATHOLOGY

Three State University of Iowa doctors and the Iowa Association of Pathologists have started a program aimed at helping hospital and community pathology laboratories provide broader diagnostic services than have been available locally in the past.

In workshops sponsored by the University and the Association, private pathologists from all parts of the state will be familiarized with diagnostic techniques which grow out of research at laboratories such as those in the University's departments of pathology and bacteriology.

Dr. Jack M. Layton, associate professor of pathology at SUI, says that with proper instruction, much of the diagnostic testing for virus diseases which is being done mainly in the large centers at the present time can be performed by the local pathologist with equipment he already has on hand.

One workshop designed to familiarize pathologists with procedures employed in the laboratory diagnosis of viral diseases was held at the University last fall. The meeting was conducted by Dr. Layton, Dr. Albert P. McKee, professor of bacteriology, and Dr. Emory D. Warner, professor and head of pathology, all of SUI, and Dr. Ken Cross, pathologist at Mercy Hospital in Iowa City and president of the Iowa Association of Pathologists.

Research such as that which is under way at the University Medical Center produces improved and simpler diagnostic techniques, Dr. Layton explains, and the University, in conjunction with the Association, can help the local pathologist by passing along an understanding of these procedures.

The result should be quicker and better service, he says. The additional days involved in mailing to laboratories outside of Iowa will be eliminated, and the local doctor will have the benefit of direct and personal contact with the pathologist.

NEW HEAD OF AMA ECONOMIC RESEARCH

The first of this month, Arthur Kemp, Ph.D., professor of economics at Claremont College, in California, succeeds Frank G. Dickinson, Ph.D., as head of the AMA Bureau of Economic Research. Dr. Dickinson is retiring after 12 years with the AMA.

Dr. Kemp, who has been at Claremont since 1953, assisted former President Herbert Hoover in preparing more than 85 articles, addresses and reports to Congress and the President between 1946 and 1954. He is 42 years of age.

THE JOURNAL *Book Shelf*



BOOKS RECEIVED

COMMUNICABLE DISEASES TRANSMITTED THROUGH THE RESPIRATORY AND ALIMENTARY TRACTS (VOL. IV OF PREVENTIVE MEDICINE IN WORLD WAR II), ed. by Col. John Boyd Coates, Jr., M.C., and Ebbe Curtis Hoff, Ph.D., M.D. (Washington, D.C., U.S. Government Printing Office, 1958. \$5.50).

ANTIBIOTICS MONOGRAPHS NO. 8: CHLOROMYCETIN (CHLORAMPHENICOL), by Theodore E. Woodward, M.D., and Charles L. Wiseman, Jr., M.D. (New York City, Medical Encyclopedia, Inc., 1958. \$4.00).

ANTIBIOTICS MONOGRAPHS NO. 9: PENICILLIN, by Harold L. Hirsh, M.D., and Lawrence E. Putnam, M.D. (New York City, Medical Encyclopedia, Inc., 1958. \$4.00).

ANTIBIOTICS MONOGRAPHS NO. 10: STREPTOMYCIN AND DIHYDROSTREPTOMYCIN, by Louis Weinstein, Ph.D., and N. Joel Ehrenkranz, M.D. (New York City, Medical Encyclopedia, Inc., 1958. \$4.00).

ANTIBIOTICS MONOGRAPHS NO. 11: MODERN CHEMOTHERAPY OF TUBERCULOSIS, by Roger S. Mitchell, M.D., and J. Carroll Bell, M.D. (New York City, Medical Encyclopedia, Inc., 1958. \$4.00).

PRACTICAL LEADS TO PUZZLING DIAGNOSES, NEUROSES THAT RUN THROUGH FAMILIES, by Walter C. Alvarez, M.D. (Philadelphia, J. B. Lippincott Company, 1958. \$9.00).

YEAR BOOK OF GENERAL SURGERY (1958-1959 YEAR BOOK SERIES), ed. by Michael E. DeBakey, M.D. (Chicago, The Year Book Publishers, Inc., 1958. \$7.50).

TREATMENT IN INTERNAL MEDICINE, by Harold Thomas Hyman, M.D. (Philadelphia, J. B. Lippincott Company, 1958. \$12.50).

THE BIRTH OF NORMAL BABIES, by Lyon P. Streean, Ph.D. (New York City, Twayne Publishers, 1958. \$3.95).

MEN, MOLDS AND HISTORY, by Felix Marti-Ibanez, M.D. (New York City, MD Publications, Inc., 1958. \$3.00).

STAPHYLOCOCCAL INFECTIONS, by Ian Maclean Smith, M.D. (Chicago, The Year Book Publishers, Inc., 1958. \$.).

HANDBOOK OF CARDIOLOGY FOR NURSES, THIRD EDITION, by Walter Modell, M.D., and Doris R. Schwartz, R.N. (New York City, Springer Publishing Company, Inc., 1958. \$4.50).

BOOK REVIEWS

THE DOCTOR'S BUSINESS, by Richard Carter. (Garden City, New York, Doubleday & Company, Inc., 1958. \$4.00).

This volume, prepared by a layman for non-physician readers, attempts to analyze how policies of medical care have come into being. The author was altogether safe in predicting that physician readers would find his thesis "controversial, if not offensive."

In general, it would appear that the material presented is unusually critical. There appears to be a strange paucity of credit given to doctors, not only for the points of view they have maintained through

the AMA but even for the medical care which they have provided to the American people.

This is the type of book, nevertheless, which all doctors should take time to read. Although they will not like it, they can thus improve their acquaintance with the criticism that many laymen make of AMA policies.—Everett M. George, M.D.

UROLOGY IN GENERAL PRACTICE, by Frank Coleman Hamm, M.D., and Sidney R. Weinberg, M.D. (Philadelphia, J. B. Lippincott Company, 1958. \$6.00).

The authors present this book to the medical profession with the fact in mind that a considerable number of urologic diseases are being treated by general practitioners.

For that reason, the content is obviously limited, but the volume covers the basic anatomy and physiology, and discusses the most commonly encountered disease entities of the urologic field. Carefully selected and well-placed illustrations add to the clarity of the text.

The part on urinary-tract infections is well written and discusses in detail the more common etiologic agents as well as the therapy provided by the various antibiotics available today. This undoubtedly will be of great value to the general practitioner, since the infections of the genito-urinary system constitute fairly common problems in the daily practice of medicine and are the most frequently encountered of all urologic diseases.

Considerable emphasis is given to the importance of history taking and physical examination, to the value of laboratory procedures, to the usefulness of instrumental examination and to the principles of Roentgen diagnosis in this specialty field.

Besides being useful to the generalist, the book can serve as a guide to the young resident physician in urology or general surgery, for it contains much valuable information.—C. W. Latchem, M.D.

MECHANISMS, DIAGNOSIS AND MANAGEMENT OF HEAD INJURIES, by E. S. Gurdjian, M.D., and J. E. Webster, M.D. (Boston, Little, Brown and Company, 1958. \$14.00).

The head injuries that the authors have seen over a 25-year span serve as the basis for this presentation. Their experience has included civilian and military head injuries, autopsies and experimental information on the mechanics of these lesions.

The 14 chapter headings include historical survey, anatomical and mechanical considerations, and diag-

nostic studies and surgical technic, as well as complications, special aspects of head injuries in children, and sports accidents. Medicolgal problems are considered, and non-surgical therapy is outlined.

To this reviewer, the section on head-injury mechanisms is unique and especially rewarding. Though the authors' experimental work has been published previously, this is the first time it has been collected and presented as an entity. The remainder of the book is well written, authoritative, non-controversial and thorough.

The book is handsomely printed on 482 pages of high-grade paper. There are many high-quality illustrations—nearly 700 of them.

This volume is a welcome and needed addition to our libraries. The general surgeon and the general practitioner should especially value this kind of reliable information. The neurosurgeon should approve of and find use for such a straightforward presentation of well-studied material on this very important subject. All of us who are sometimes troubled in our efforts to care for patients with head injuries salute the authors of this book for making available this practical, authoritative, handsome and useful monograph.—*John T. Bakody, M.D.*

THE NEUROSES AND THEIR TREATMENT, ed. by *Edward Podolsky, M.D.* (New York City, Philosophical Library, Inc., 1958. \$10.00).

The editor of this volume has done a very intelligent job of selecting materials, with the result that the book is worth careful study.

The first chapter is a study by René A. Spitz of anxiety in infancy—a study obviously burdened by communication difficulties and necessitating conclusions that are unverifiable in the usual way. Comparison with similar studies, however, will reveal an attempt to use valid observational material rather than unsubstantiated impressionistic data. Thus, this essay perhaps helps to place the story of infantile anxiety on a scientific basis.

Subsequent articles deal with the diagnosis of hysteria in childhood, and there is also an excellent report of an analysis of a case of grand hysteria of Charcot—accomplished against what seems to me to have been frightening odds. A really basic concept relative to the neurosis has been well presented under the heading "Impairment of the Sense of Reality."

Several articles deal with the possible usefulness of "tranquilizers." One such paper deals with the place of sedation in the therapy of the various neuroses, and in that presentation the author treats manipulation of the subjective anxiety (tension or depression) as the major function of the sedative. This, of course, implies the control of a "state of being" as one undertakes to use that state and/or other technics to bring about a more basic modification. He does not endorse the reduction of anxiety as the only end product of therapy.

One of the final chapters is an attempt to evaluate the results of psychotherapy. The vast statistical and methodological difficulties are indicated, and the results are inconclusive.

This volume is recommended to practicing psychiatrists.—*Howard V. Turner, M.D.*

YEAR BOOK OF PEDIATRICS (1958-1959 YEAR BOOK SERIES), ed. by *Sidney S. Gellis, M.D.* (Chicago, The Year Book Publishers, Inc., 1958. \$7.50).

Once again, Dr. Gellis has compiled an excellent résumé of the pediatrics literature of the past year, utilizing representative material from 70 or more international journals.

As in years past, the editorial comments add greatly to the value of this annual work. This book is a "must" for the busy physician who provides medical care for children.—*Marion E. Alberts, M.D.*

POISONING, A GUIDE TO CLINICAL DIAGNOSIS AND TREATMENT, SECOND EDITION, by *W. F. von Oettingen, M.D., Ph.D.* (Philadelphia, W. B. Saunders Company, 1958. \$12.50).

Six years have passed since the publication of the first edition of Dr. von Oettingen's masterful study on the diagnosis and treatment of poisoning. Many new toxic preparations have appeared on the scene during that time to complicate the ever-present problem of inhalation, ingestion or contact with harmful substances. This edition brings us up to date.

There should be a place in each hospital emergency treatment center for this valuable reference on the diagnosis and treatment of poisoning.

—*Marion E. Alberts, M.D.*

DIABETES AND BASIC METABOLIC PROBLEMS

The American Diabetes Association's Seventh Postgraduate Course on Diabetes and Basic Metabolic Problems will be given at the Chase and Park Plaza Hotels, in St. Louis, on January 21, 22 and 23. The St. Louis and Washington University Schools of Medicine will be co-sponsors.

The six half-day sessions will cover the following subjects: pathophysiology of insulin, general principles in the treatment of diabetes, the relationship of lipid metabolism to diabetes, special problems in the management of diabetes, complications of diabetes, and oral hypoglycemic agents. The AAGP will give 18 hours of Category II credit to those of its members who attend the course. The fees are \$50 for members of the American Diabetes Association, and \$100 for non-members.

The faculty will include Drs. Frank N. Allan, Boston; Charles H. Best, Toronto; Arthur R. Colwell, Sr., Chicago; Jerome W. Conn, Ann Arbor; T. S. Danowski, Pittsburgh; Garfield G. Duncan, Philadelphia; Robert M. Kark, Chicago; Harvey C. Knowles, Jr., Cincinnati; Rachmiel Levine, Chicago; Francis D. W. Lukens, Philadelphia; Alexander Marble, Boston; Max Miller, Cleveland; Franklin B. Peck, Sr., Indianapolis; Henry T. Ricketts, Chicago; William C. Stadie, Philadelphia; and Frederick W. Williams, New York.

THE DOCTOR'S BUSINESS

Health and Accident Insurance

HOWARD D. BAKER

WATERLOO



"How much health and accident insurance should I carry?"

In undertaking to answer that question, it is important for the doctor to remember that health and accident insurance is *disaster income*, and that it is neither necessary nor prudent to carry insurance equal to his earned income. It is essential merely that he have enough income to assure the basic necessities for himself and his family and to meet any fixed obligations to which he is committed.

It is much more important to have indemnity for long enough periods. Health and accident insurance should be based on need, and should not be carried in excess of that need.

After considerable study of the problem, Professional Management Midwest has adopted the following basic principles regarding health and accident programs.

AMOUNT OF COVERAGE

Monthly coverage should consist of a minimum \$400 per month, plus \$50 per month for each dependent including the doctor's wife, and an amount equal to his fixed monthly financial commitments. For example, if a doctor has a wife, three children and mortgage payments of \$150 per month, he should carry at least \$750 monthly protection. In making this computation, the physician should make an adjustment for income from outside sources.

TYPES OF CONTRACT

It is our recommendation that at least 50 per cent of the coverage be high-quality, permanent, individual policies with reputable companies. Needless to say, these should be non-cancellable and guaranteed renewable to age 65. Thus, at least

half of the program will be assured of permanence.

The remaining half of the program should consist of high-grade group contracts. Though semi-permanent, these policies are contingent upon the doctor's continued membership in the group and on the continuation of the relationship between the group and the insurance company. As a supplement to permanent insurance, these contracts offer excellent coverage at very reasonable cost. The Iowa State Medical Society, like most specialty groups and other state medical organizations, has an arrangement under which member doctors can purchase group accident and health coverage.

INDEMNITY PERIODS

Since we believe in long-term catastrophic coverage, as opposed to short-term protection, and since most doctors have cash and accounts receivable to carry them for at least 30 to 90 days, we recommend the following indemnity and elimination periods.

Sickness: Indemnity should start the thirty-first or sixty-first day, and should be payable for a maximum period of seven to ten years.

Accident: Indemnity should start with the first day of disability and should be payable for life. Since most good policies pay from the first day, no elimination period is recommended.

Health and accident insurance is a highly competitive field, and there are many bad, as well as good, contracts being written today. As with most other goods and services, it should be borne in mind that one gets what he pays for. The day one becomes disabled, it will be too late to discover that he has purchased a virtually worthless policy. Thus, with the aid of his insurance advisor, the physician should carefully evaluate his needs and each contract's provision before he buys.

Case Studies



Dysphagia as a Presenting Symptom in A CASE OF SUBMUCOSAL ESOPHAGEAL CYST

JOHN K. MACGREGOR, M.D.
MASON CITY

This report will not contain a review of the incidence and symptomatology associated with the relatively rare benign cysts of the esophagus. For such information the reader is referred to an article by Boyd and Hill in the 1954 volume of *ANNALS OF SURGERY*,* as well as to the standard texts on general or, more particularly, thoracic surgery.

A 65-year-old white man was admitted to St. Joseph Mercy Hospital, Mason City, on August 19, 1953, with the following history. During the eight months prior to his admission, he had had multiple episodes of minimal right upper quadrant pain associated with fatty-food intolerance, and a sensation of upper abdominal fullness. At no time had he noted severe pain or nausea. A cholecystogram two weeks prior to his admission had revealed the presence of multiple stones in the gallbladder.

In addition to this symptomatology, he stated that approximately a week before entering the hospital, he had been awakened during the night with what he termed "a severe chill," and on rising to secure more bedclothes, had noted a sensation of deepseated intrathoracic distress. The following morning, he was unable to swallow solid food, and regurgitated undigested material from the esophagus, experiencing what he described as a "sensation of spasm" localized in the lower mid-thorax. Following the onset of this distress, he had taken only liquids for several days, and then during the 24-48 hours immediately prior to his admission, he had again begun to take small amounts of very soft food. At no time had he been aware of any severe substernal pain, nor had he noticed any symptoms other than regurgitation. On careful questioning he gave no history of progressive dysphagia. A gastrointestinal x-ray series, at the time of his gallstone diagnosis two weeks before admission, had been completely normal.

His past medical history and system review, except for Meniere's disease, had been unremarkable.

Physical examination showed normal pulse, temperature and respiration. General examination showed a patient who was alert, oriented and in no acute distress. Examination of the head and neck was within normal limits, except for edentulism. Chest examination revealed no abnormal-

ities. The abdomen was flat, soft and without masses. The genitalia were normal, and the rectal examination was within normal limits.

Laboratory studies showed a hemoglobin of 12.6 Gm./100 ml., a red blood cell count of 4,000,000/cu. mm., and a white blood cell count of 7,000/cu. mm., with a normal differential. A urinalysis was negative, and a serology was negative.

A chest x-ray was reported as showing a healthy normal chest. Barium enema showed a mild diverticulosis, but nothing else abnormal. Oral barium showed a rounded, roughly oval filling defect in the esophagus at the level of the eighth thoracic vertebra. There was a little hesitation in the passage of thin barium, although the lesion appeared to be surrounded in transient fashion by the barium flow. When a thick barium was used, there was considerable delay at this level.

Since the patient was in no acute distress, he was discharged from the hospital for the time being, and when he returned on August 25, 1953, an esophagoscopy was carried out. In the mid-esophagus, a rounded, smooth, mucosal-covered tumor was found filling the lumen of the esophagus almost completely. An attempt at biopsy was unsuccessful, and in view of what was later found to be the nature of the lesion, that failure was undoubtedly fortunate.

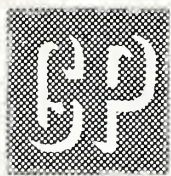
On August 26, 1953, a left thoracotomy was performed, the mediastinal pleura was reflected, and at the approximate level of the eighth thoracic vertebra a 2.5 cm. smooth, round cystic mass was found to move freely, deep to the muscularis of the esophagus. The muscularis was incised, and the tumor was found to lie in the submucosa. It was quite freely movable, and seemed to arise from a thin stalk. The cyst was removed intact, and the pathologist reported it to be a small sac-like structure possessing a dense, fibrous wall filled with clotted blood. There was marked proliferation of granulation tissue, infiltrated with chronic inflammatory cells. There was no evidence of malignancy.

The patient's postoperative course was entirely satisfactory, and he has had no dysphagia since the procedure. A cholecystectomy was performed about one year after the thoracotomy.

SUMMARY

A sudden onset of dysphagia was noted in a 65-year-old white male, and it appeared to be secondary to hemorrhage into the substance of a benign submucosal esophageal cyst which, prior to the time of the bleeding, had been completely asymptomatic.

* Boyd, D. P., and Hill, L. D., III: Benign tumors of esophagus. *ANN. SURG.*, 139:312-324, (Mar.) 1954.



Iowa Academy of General Practice

PUBLIC RELATIONS

Medical schools 30 years ago didn't offer lectures on public relations, for at that time physicians had yet to learn that they needed anything of the sort. Since then, however, people generally have adopted the attitude that a wide variety of essential services are included among their inalienable rights. For example, though the Social Security Act was originally intended to provide only for people who might otherwise be in desperate need during their declining years, it now seems that everyone is trying to establish his eligibility for federal retirement benefits, even if his savings and investments will have made him financially secure. Nowadays almost every individual expects goods, services and even money to be given him, whereas earlier he was content to have an opportunity to earn them.

In this radically altered atmosphere, every sort of group needs its public relations program. Our own profession has such plans, as do industry, labor and even government.

Years ago, before *public relations* became a much-used phrase, the family physician was looked upon with pride and admiration. Was it because of the "pills" he dispensed? No, it was because of the harmony which existed between him and his patients. Usually he had no employees, his patients asked him to help them only with their major health problems, and he was not literally buried in paper work. Though she may not have realized it, the local telephone operator acted as his assistant and was a big factor in maintaining this harmony. She seemed always to know where he was to be found, whether he was at the barbershop getting his morning shave or out in the country braving the muddy roads to make a call. The physician himself, whenever he met one of his patients, always had time to visit, and if the patient were someone whom he hadn't seen recently, he had time to inquire about each of the other members of the patient's family. Thus, the doctor's public relations were maintained without a formal program.

Times have changed, and today the medical profession works hard at maintaining harmony between doctors and the public. Medical organizations have had to assume responsibility for that work not only because the public is more likely

than it used to be to misunderstand doctors' objectives and points of view, but because the doctors' time is at a premium. The constant increase of scientific knowledge, the medical information that is made available to the public, and the growing emphasis upon preventive medicine all have helped make American medical care the finest in the world, but they have also made doctors the busiest of men.

Sometimes the harmony between physician and patient is strained because of the stress and fatigue which the doctor and his staff must bear. Yet, that harmony is something very precious, and each of us must be careful not to lose it, for it is our major bulwark against socialized medicine.

Physicians and the members of their office staffs must make every effort to foster and strengthen this harmony. Even though they are fatigued and strained by increasing demands for their services, they can't afford to delegate the whole medical public relations job to organized medicine. Courtesy must always be uppermost in their minds. Briskness and bluntness must not be allowed to replace courtesy. Patients want to be informed about their ills, and since they don't have a knowledge of scientific terms, explanations must be phrased so that they can understand them. Patients want the truth and are prepared to accept it, be it encouraging or discouraging. For these reasons, no matter how busy the physician may be, he should be sure to spend an extra few minutes talking with each individual. The pleasantness of such discussions can be of great psychological benefit to the patient and is sure to leave him with a good attitude toward his doctor and toward the medical profession as a whole.

Patients' faith in their doctors is not determined by the number and size of the diplomas and certificates that are displayed on the office walls, but by the attention and interest that doctors show in them and by the results that they achieve.

During the few minutes that the physician spends talking with his patient at the conclusion of the visit, he should discuss the charge that he will make for his professional services, be it for an office call, an examination or a proposed surgical procedure. Introducing the subject of fees is not a mercenary act, but a part of good business, and it actually promotes physician-patient harmony.

The preservation of confidence and cordiality between physician and patient is only a part of medical public relations, but it is ever so important, if for no other reason than to make the practice of medicine thoroughly enjoyable.

S.U.I.-I.A.G.P. REFRESHER COURSE

Make your plans now to attend the Refresher Course for General Practitioners at University Hospitals, Iowa City, February 17-20.

GYNECOLOGY AND ONCOLOGY

A postgraduate course in gynecology and oncology is to be offered by the University of Nebraska College of Medicine, Omaha, on January 15 and 16. The registration fee will be \$20, and the program is as follows:

Thursday, January 15

- 9:00 a.m. "Time and Two Women"—American Cancer Society film not yet released for general viewing
- 9:30 "The Office Practice of Gynecologic Oncology"—Roger B. Scott, M.D., associate professor of obstetrics and gynecology, Western Reserve University
- 10:30 "Diagnosis of Early Carcinoma of the Cervix"—Ben M. Peckham, M.D., professor and chairman of obstetrics and gynecology, University of Wisconsin
- 11:30 "Treatment of Early Carcinoma of the Cervix"—James F. Nolan, M.D., assistant clinical professor of obstetrics and gynecology at the University of Southern California
- 1:30 p.m. "Concepts of Treatment of Primary Invasive Carcinoma of the Cervix"—Colin Schack, M.D., instructor in obstetrics and gynecology, University of Nebraska
- 2:30 "Treatment of Recurrent and Persistent Carcinoma of the Cervix"—Dr. Nolan
- 3:45 OPEN FORUM—Drs. Nolan, Peckham, Schack and Scott

Friday, January 16

- 9:00 a.m. "Methods of Investigation and Treatment of Pre- and Postmenopausal Bleeding"—Dr. Scott
- 10:00 "Newer Progestational Compounds"—Hilton A. Salhanick, research assistant professor of obstetrics and gynecology, University of Nebraska
- 11:00 "Adenomatous Hyperplasia"—Dr. Peckham
- 1:30 p.m. "Treatment of Carcinoma of the Endometrium"—Dr. Nolan
- 2:15 "Role of Surgery in Endometrial Carcinoma Therapy"—Roy G. Holly, M.D., professor and chairman of obstetrics and gynecology, University of Nebraska
- 3:15 "Hystogenesis of Endometriosis"—Dr. Peckham

DOCTORS ARE CREDITED WITH PREVENTING ACCIDENTS

An insurance executive who spoke at the AMA Clinical Meeting in Minneapolis said he firmly believes that a concerted drive by doctors against the No. 1 killer of children—accidents—is beginning to pay off.

Dr. George W. Wheatley, vice-president of the Metropolitan Life Insurance Co., said that the accidental death rate among children between one and 14 years of age has declined 17.3 per cent in less than a decade.

The greatest drop was in deaths from poisoning in the 1-4 year age group. Dr. Wheatley pointed out that doctors have fought hard for legislation banning the use of inflammable materials in clothing and limiting the amounts of poisonous lead in paint on articles that infants might chew.

He said that education of parents in accident prevention is one of the major tasks ahead. "Counseling parents on safety attitudes, practices and behavior," he declared, "should become a regular part of routine examinations. Many opportunities are also offered during home visits to point out specific hazards that may have escaped parents' notice."

OBSTETRICS AND GYNECOLOGY

A one-day course in obstetrics and gynecology will be offered in Iowa City on January 14, under the sponsorship of the S.U.I. Department of Obstetrics and Gynecology, and the Division of Maternal and Child Health of the Iowa State Department of Health. Doctors are asked to register in advance and to enclose the \$15 registration fee with their requests for registration. The program will be as follows:

- 9:00 a.m. "Current Concepts of Uterine Contractility"—Irwin H. Kaiser, M.D., associate professor of obstetrics and gynecology, University of Minnesota, Minneapolis
- 9:30 "Postmaturity"—Ralph C. Benson, M.D., professor of obstetrics and gynecology, University of Oregon
- 10:00 "Iatrogenic Genital Tract Infections"—R. Gordon Douglas, M.D., professor of obstetrics and gynecology, New York University
- 10:45 "Pessaries, Past and Present"—Dr. Benson
- 11:15 "The Significance of an Adnexal Mass"—Dr. Kaiser
- 11:45 QUESTION AND ANSWER PERIOD
- 1:30 p.m. "Trends in Obstetrical Care"—Dr. Douglas
- 2:15 "The Treatment of Dysfunctional Uterine Bleeding"—Dr. Benson
- 2:45 "The Value of X-ray Pelvimetry"—Dr. Kaiser
- 3:45 PANEL DISCUSSION ON REPEAT CESAREAN SECTION

MEDICAL HISTORY



Times Have Changed

G. F. HARKNESS, M.D.

DAVENPORT

WHEN I WAS asked to contribute my views on the history of medicine during the past half-century, I wondered that I should have received such a request, and yet I acknowledge it did have a reminiscent appeal. Providence has been kind to me, so my memories go back to the early years of this country as to medical education and the practice of medicine. I believe I have lived in a period that has witnessed greater scientific advances in medicine than any like period of any era. Since the request was made that I write in a more or less narrative way, I apologize to the reader that so much is written in the first person.

Let me first state I occasionally hear some men of my vintage who criticize younger men and state they do not live up to our Hippocratic principles as formerly. Let me state that I do not agree with this attitude and feel they are just as dedicated to our profession as those of my generation. They have the advantage that modern medical education has so greatly improved and the science of medicine has placed in their hands the tools with which they can do so much more for those sick in body and mind. I salute them and envy them for this advantage with the admonition that to succeed in medicine one must always remain a student.

Yes, times have changed.

SCHOOL MEMORIES

Speaking first of medical education, let me take you back to the early days of this century. My preceptor was Dr. L. W. Dean, who practiced ophthalmology and otolaryngology. I was his sole assistant from the beginning of my freshman year. No retinue trailed behind their chief in making rounds. He was an untiring worker and demanded the same from any one working under him. He was a hard task master, but fortunately I early learned how valuable was the practical training I was receiving. During my freshman year, he also was professor of physiology. Physiology was then largely a matter of lectures. Dr. Dean did establish a primitive physiological laboratory consisting partly of some dogs, and among the things we did was to operate on them. Just to mention

one procedure, we made permanent gastric and gallbladder fistulae, thereby being able to draw off secretions and bile. I was his man Friday, and it was up to me to get the dogs for which the University would pay a certain sum per dog. Memory takes me back to how this was accomplished. This was in the preauto days, and I conceived the idea of enlisting the aid of a man who ran a livery stable. It is well known that there are periodically times in a female dog's life when she is very attractive not to one but a retinue of male dogs. The deal made was that this man was to get a female dog at this particular period in her life, tie her behind a buggy and drive around Iowa City. When the lure had attracted a sufficient retinue, he would drive back into his livery stable, then close the door, and lo and behold there was a surplus of dogs, so many that only the evident mongrels were kept. This was to the livery man's profit, and I am ashamed to confess incidentally I might have shared to some extent. This is only mentioned to illustrate the difficulties of establishing a primitive physiology laboratory.

Yes, times have changed.

I would like to pause to pay tribute to a remarkable man, my preceptor L. W. Dean, and to mention the part he played in establishing a medical college of a new era. The next year after the above-mentioned anecdote, he assumed the chair in his chosen field of otolaryngology and a large part of the clinical side of ophthalmology. He then later became dean of the College of Medicine. It was his acumen that aided greatly in getting \$2,500,000 from the Rockefeller Foundation and then an equally matching sum from the State of Iowa. The purpose of this donation was to try out the feasibility of a Class A medical college in a small center of population. He early appreciated the necessity of an assurance of clinical material for such a school and was a big factor in the legislation of our present state laws in which all counties have to contribute to state institutions but relative to the College of Medicine and its hospitals, and each county according to population is entitled to so many hospital days

for its indigent that are in need of medical attention, thus relieving the county of some of the expense of these unfortunate individuals. Because of later incidents, I do not believe that his early accomplishments have been given proper recognition. More than that, I feel it was a great privilege to have had such a man for a preceptor, and as years passed a sincere friendship existed between us that lasted until his death.

Out of my medical class of about 43 members, I believe only about four took internship. My clinical undergraduate contacts had been in a special field, and feeling I should have more general medical clinical contacts, I was one of those four who spent such a year. Obstetrics, as I was taught it, was practically only lectures and demonstrations on the manikin. Memory takes me back to my first delivery. The first day of my internship, a boy came running up to the hospital saying that a woman was dying in a house about two blocks from the hospital. The Mother Superior said that I had better go down and see what I could do, so taking my uninitiated small bag, I followed the boy to a poor home, and there was a prospective mother in an unclean bed about to deliver her baby. Nature was kind, and with her assistance I completed the delivery, conjuring in my mind all the complications that would follow. At that time, I was relieved by the arrival of the family doctor. I introduced myself and explained what I had done. I guess he was busy, for all he said was, "Well, young man, you are doing fine," and out the door he went.

Yes, times have changed.

PROBLEMS OF 50 YEARS AGO

Memory takes me back to the days when diphtheria was so much more prevalent and tracheotomies for respiratory obstruction much more frequent. One learned the hard way that if your patient was blue but the heart was still doing its job, your chances of saving your patient were good, but in the pale child with a heart battling against the toxins of disease, relieving the respiratory obstruction still had a bad prognosis. Again memory takes me to the first or second year of my practice. I was called to a rather poor home with no warning of what was ahead of me. There was a little boy, another case of diphtheria, lying on a couch, blue to purple in color. Fortunately, his heart was still doing its job, but he intermittently was gasping for air. There was no time for sterilization. Wrapping the child in a sheet, having his mother hold his head back and quickly reaching for a curved bistoury from my small surgical case, I did a medium low stab tracheotomy; then holding the trachea open with some artery forceps, I was able to reach into the trachea with forceps and pull out a mass of obstructing membrane. I do not remember whether I was ever paid anything for my services, if anything

it was small, but I shall always vividly remember sitting holding the trachea open, having sent a neighbor to the office for a tracheotomy tube, and the thrill I had of the knowledge that I had saved a little boy's life.

Yes, times have changed.

Since this is more or less a narrative tale, I wish to pause and pay tribute to an Iowa man whom I consider one of the grand men of medicine in this country during my era and who fortunately is still with us. His pioneer work in developing diphtheria antitoxin is well known, and as time passed he became a leader nationally, serving on many boards. I know of no one man who has had a greater influence in raising the standards of medical education and its requirements. He was one of my teachers and as such was an inspiration. Then and through the succeeding years to have enjoyed a close personal friendship with him has been one of the real privileges of my medical life. I am, of course, referring to Dr. Walter L. Bierring, so deserving of the honors that he has received, yet retaining a modesty and remaining, as always, a kind and considerate gentleman.

Yes, times have changed.

SUGGESTIONS TO YOUNG DOCTORS

Memory takes me back to the preautomobile days—no paved roads, smaller communities that had absolutely no hospital facilities and had to be reached only by railroad or horse and buggy transportation. Yet persons became desperately ill with no possibility of their being moved. Major kitchen-table operations were at times a necessity. Decisions to operate had to be made from clinical findings alone and without any laboratory assistance to fortify one's diagnosis. I remember going a matter of 50 miles from home and having to make such a decision. The patient had complications following an otitic infection, and the history and clinical findings pointed definitely to a brain abscess. The operation was performed on a kitchen table, and the abscess was found. Winter time brought some hardships. Today, with roads kept open and with heated automobiles, is quite a contrast with being met at the edge of the city by a farmer whose family of children were ill with scarlet fever, several of them suffering from otitic complications. A bob sled ride for six or seven miles, buried down in straw and covered with buffalo robes, is an experience I remember.

Yes, times have changed.

What criticism comes to mind as to present-day practice of medicine? I think we have a greater group responsibility than in former years.

Wonderful as has been this age of the antibiotics, we should guard ourselves against the abuses of their use such as repeatedly prescribing their use for minor conditions, many self-limited, and with single doses but at intervals, thereby

developing in the individual a sensitivity that might at some future time prevent their use in serious conditions, even at times when their use might be life saving.

Secondly, I believe at times there is an economic abuse from the patient's side of the picture. No one has a higher regard for laboratory procedures to support or refute a clinical diagnosis. There is a difference between the teaching hospital and the non-teaching hospital. In the teaching hospital one endorses the use of the laboratories not only to support or refute a clinical diagnosis but also to eliminate remote possibilities. In the non-teaching hospital one should consider the economics of their use from the patient's standpoint and forego some of these services relative to remote possibilities.

Yes, times have changed.

This is perhaps a sufficient attempt to give a word picture from the standpoint of the individual doctor, but what of the changes that have taken place in the past years that affect us as part of the medical profession?

The doctor has for years, with few exceptions, been an arch individualist generally respected in his community but making his own decisions and making his requests for compensation based on his own value of the services delivered. His meetings with his confreres largely confined themselves to scientific presentations; very little was heard of so-called public relations, and little attention was given to legislative matters. Government prided itself on balanced budgets and limited its activities strictly within the confines of the precepts as handed down in the Declaration of Independence and the Constitution of the United States. The division of prerogatives between state and national governments was generally accepted, and every encouragement was given to the rewards of personal efforts and ambitions.

It is unfortunate that the world is at the present time involved in a conflict, a struggle between two ideologies. First, there is that of communism which acknowledges an ambition to conquer the world by force, disregarding the dignity of the individual and eliminating by wholesale murder those that disagree. This is in contrast to nations that look forward to peace, and respect the rights of each other. The enormous expense for sufficient defense in this struggle cannot be ignored, but has nothing to do with this treatise.

There are changes that have to do with government that are very pertinent to this discussion. Our forms of state and national governments have no income except through the collection of taxes. I deplore that during these years under discussion, socialistic ideas have made inroads upon American thinking and in various instances have been adopted.

Younger men in medicine who have grown up

during these socialistic inroads into government do not have the opportunity to have a perspective of the gradual changes that have taken place in government. Our government once offered incentives for personal endeavors and did not unduly penalize the individual through taxation or prevent his receiving the rewards of his accomplishments.

With these inroads has come the devaluation of the dollar. When the federal government takes over the responsibilities not only of state and local governments but of private institutions, you inevitably see representatives of those organizations going to the federal government, hats in hand, seeking to get back from the government part of the money that has been collected from them as taxes. When the federal government instituted excessive individual surtaxes, though their aggregate total is almost a negligible factor in the total taxes collected, it was in effect confiscating private property. With it all, we see an increasingly enormous federal debt with no sincere effort to reduce the same. To unload the payment of this enormous public debt on future generations is wrong.

To say that a crisis is over because of some increased employment, to proclaim that we are saved because individual buying has increased when we well know that much of this buying is based on partial-payment obligations for luxuries—all this is the result of fallacious thinking.

Decreasing the buying power of the dollar and increasing the public debt are not prosperity but inflation. And inflation, if allowed to go on and on, means—and God forbid!—eventual repudiation.

I believe it was Lenin or Marx who said capitalistic forms of government can destroy themselves with taxation.

One may well ask, "What does all this mean to the practice of medicine?" I think it really means a great deal if we really want to preserve the traditions of our profession.

One must realize that today there are those within and without our government who would gladly lend aid to the socialization of health care. We have seen it occur in other countries. We must also bear in mind that this decision will eventually be decided by the lay public and not by the profession of medicine. Our job is to convince this lay public that as a profession we can do a better job than can any government bureau.

Individually we are impotent and must turn to organized efforts. Our organized efforts however must differ from many organized efforts by other groups whose efforts are directed simply to improve the economic status of their own groups, regardless of the effect on the general welfare of the nation.

Our organized efforts must assume a dual obligation: first, providing better health care for the

nation, both economically and medically, and secondly to aid in preserving the traditions of our profession. One act by a doctor who strays from ethical precepts does more harm in the public mind than the effect of 50 individual altruistic performances in molding public opinion.

Yes, times have changed.

BLUE SHIELD

The four essentials in life are food, shelter, clothing and medical care when ill. The first three can be budgeted since they are parts of our daily lives, but not the fourth, since the need for it occurs so intermittently, and then may be so severe as to be economically disastrous to the family. The only answer is some form of health insurance.

The Blue Shield program with its phenomenal growth which asks only for voluntary individual professional participation has been the profession's answer to this fourth family need. Fundamentally, it is far more than that. Otherwise, this field could well have been left to good commercial insurance carriers. Because of Blue Shield, those organizations now offer better health coverage. Blue Shield has been a vital force in opposition to government socialization of medical care. Blue Shield is big business with a dual responsibility to its policyholders and to the medical profession.

Its organizational format and business must rest on a sound actuarial base. In that way, it differs from the usually accepted medical association. No doubt some Blue Shield organizations have made some but not vital mistakes. As a business, it cannot remain static. To fulfill its purpose, it must meet changing economic conditions, feel its way with pilot studies, and as far as possible meet the market demands of its policyholders, ever keeping in mind its fundamental purpose—opposition to government socialization of health care.

Yes, times have changed.

It is to be regretted that there are those individuals in the profession, even though Blue Shield asks only for voluntary participation, who oppose anything that they feel invades their rights as arch individualists. Perhaps they cannot see the trees in the forest because of the leaves. Voluntary acceptance of certain restrictions from within our own ranks is far better than eventually having them imposed upon us in a far greater degree by government.

Yes, times have changed.

CONCLUSION

These final remarks are included to illustrate how different are our problems today as compared with years past. This was my assignment.

One would be very foolish to prophesy, but one can cling to the firm belief that we of the medical

profession will remain true to our Hippocratic oath and continue to serve those sick in mind and body, regardless of creed, color or race, to the best of our individual capabilities.

CHICAGO OPHTHALMOLOGICAL SOCIETY

The Chicago Ophthalmological Society will hold its Annual Clinical Conference on February 13 and 14 at the Drake Hotel. The speakers will include Dr. Paul A. Chandler, Boston; Dr. Charles E. Iliff, Baltimore; Dr. Samuel J. Kimura, San Francisco; Dr. John Harry King, Washington, D. C.; Dr. J. V. Cassady, South Bend; Dr. J. Robert Fitzgerald, Chicago; Dr. Wm. F. Hughes, Chicago; Dr. Gilbert Iser, Chicago; Dr. Bertha Klien, Chicago; Dr. Frank W. Newell, Chicago; Dr. R. Charles Oldfield, Oak Park; Dr. John H. Olwin, Chicago; Dr. Frank Pirruccello, Evanston; and Dr. Theodore Zekman, Chicago.

The subjects will include a symposium on the management of surgical conditions of lids and lacrimal apparatus, management of uveitis, prophylaxis and treatment of vascular occlusions, plastic surgical principles, clinical value of electro-retinography, management of cardiac arrest, glaucoma management and the present status of preserved eye tissue for transplantation.

The registration fee of \$45 should be sent to Mrs. Mary E. Ryan, 1150 North Lorel Avenue, Chicago 51.

HEREDITARY FACTOR IN MULTIPLE SCLEROSIS

In the December, 1958, issue of *AMA ARCHIVES OF NEUROLOGY AND PSYCHIATRY*, Roland P. Mackay, M.D., and Ntinos C. Myrianthopoulos, Ph.D., both of the University of Illinois College of Medicine, have reported a study that seems strongly to indicate a hereditary factor in multiple sclerosis.

They studied 63 sets of twins—54 sets completely and the remaining nine sets less fully. Among the sets of identical twins, there were two pairs in which both had the disease, five in whom it appeared that both had the disease, and 22 in whom only one twin had the disease.

Among the non-identical twins, there was only one set in whom both twins had the disease; three in whom it appeared that both had the disease; and 21 in whom only one twin had it.

Studies of more than 1,000 relatives of these twins showed a prevalence of the disease ranging from 20 to 33 times that found in the general population, but the investigators said it appears unlikely that multiple sclerosis is of purely genetic origin. "Thus it is possible," they theorized, "that a genetic factor may require the addition of an environmental agent before the disease can develop."

STATE DEPARTMENT OF HEALTH


COMMISSIONER

DIPHTHERIA DIAGNOSIS AND VIRULENCE TESTING AT THE IOWA STATE HYGIENIC LABORATORY

One of the policies of the State Hygienic Laboratory is to seek and evaluate new technics which will aid in the examination of specimens, especially bacteriologic ones. Improvements in culture media and technics have made it possible to report laboratory findings within a much shorter period of time than formerly. For example, new methods have recently been instituted for the examination of specimens for *Corynebacterium diphtheriae*. Although the basic technic has been available for quite some time, recent investigations and refinements have made it usable in the laboratory examination of clinically-suspected specimens.

However, regardless of the refinement of technics, the examinations will fail if the specimens are collected or submitted improperly. The State Hygienic Laboratory furnishes a Diphtheria Outfit which contains two swabs. One of these swabs should be used to collect material from throat lesions and tonsillar crypts, and the other one should be passed through one naris to the nasopharynx. By carefully completing both steps, the physician will be assured of the best possible sampling.

When the specimens have been received at the laboratory, they are immediately inoculated onto the slant surface of Pai's medium (CHINESE M.J., 46:1203, 1932). This medium is simple to prepare and provides excellent substrate for primary isolation. It enhances metachromatic granulation and allows for the demonstration of typical "Chinese lettering."

The specimen swabs are also inoculated onto modified Tinsdale's medium (J. INFEC. DIS., 102: 88-93, 1958). This medium is also simple to prepare and excellent for primary isolation of *C. diphtheriae* and the closely associated and confusing *C. ulcerans*. Experience is not a prerequisite for the use of this medium. The "browning" that occurs in the swabs and at the original site of inoculation after 10-12 hours' incubation greatly increases the validity of presumptive positive or

negative reports over those based upon the unreliable smear technic. With further incubation, *C. diphtheriae* and *C. ulcerans* produce colonies with a distinctly outlined halo, and these can be transferred directly to the *in vitro* toxigenicity-test plate. The medium eliminates doubt and spares the investigator the multiple sub-culturing that often is necessary with other tellurite media.

After 24 hours, incubation smears and stains are made from both Pai's and Tinsdale's media, and a subculture is made from the Pai's slant to a petri plate containing Tinsdale's medium.

The next step in the examination of cultures of *C. diphtheriae* is to determine whether or not they are toxigenic. Until the adaptation by the State Hygienic Laboratory of the *in vitro* test, guinea pigs were used to determine the toxigenicity of suspect cultures. The *in vitro* method has not been used routinely by many laboratories because of the need for rabbit serum completely free of hemolysis. A serum substitute has been devised which is fairly easy to prepare, and one of the biological supply houses is presently evaluating a ready-to-use substitute that should be on the market very soon.

The advantages of the *in vitro* test are that several toxigenicity tests can be performed on the same plate and that the results are known within approximately 18 hours, in addition to the 24 hours required for primary isolations. All of the necessary materials for this test can be made up in advance and will keep for a reasonable length of time under refrigeration.

The use of these media in the laboratory makes them of considerable value both to the patient and to the physician because of the time saved in the examination of specimens. The tests are reliable and can be easily controlled with toxigenic strains of *C. diphtheriae*. One other major point is that these tests eliminate the expense of maintaining laboratory animals for the *in vivo* toxigenicity test.

The State Hygienic Laboratories will make every effort to aid and/or instruct anyone who is desirous of incorporating these procedures into his laboratory routine.

DIPHTHERIA CASES AND DEATHS
Iowa 1940-1958

Year	Number of Cases	Number of Deaths
1940	190	15
1941	199	8
1942	187	10
1943	156	12
1944	203	12
1945	226	13
1946	187	16
1947	100	3
1948	60	5
1949	32	1
1950	24	5
1951	14	1
1952	22	3
1953	14	0
1954	18	1
1955	19	1
1956	18	1
1957	13	1
1958 (through November)	12	1

Diphtheria still occurs in Iowa. The first year in which Iowa had fewer than 100 cases was 1948, and in only one year, 1953, were there no reported diphtheria deaths in the state.

Distribution of cases over the state continues to be spotty, with each year showing some one or two areas having a concentration of cases. The focus of infection in Black Hawk County disappeared about five years ago. Three years ago, in 1955, an outbreak started in Scott County with 12 cases and continued into the winter of 1956 with eight cases recorded for the county in that year. In 1957, Pottawattamie County reported five of the 13 cases. This past year, 1958, Woodbury County had four of the 12 cases reported through November.

The average age of diphtheria patients is increasing. As more babies are immunized and more young children are given boosters, the average age of affected individuals has gone into the teens. However, in the instances noted in which groups of cases have occurred in one county, the average age of patients is lower than in the state as a whole. In those counties, the infection appears to have found groups wherein immunization has been neglected. For example, the ages of the Pottawattamie patients in 1957 were 2½, 5, 4, 10 and 4 years. The deaths in 1957 and 1958 were in persons 42 and 64 years of age.

INTERPRETATION OF TREPONEMAL TESTS
FOR SYPHILIS

One of the most perplexing problems facing the physician is that of the patient who has unanticipated reactive nontreponemal (VDRL and Kolmer) tests for syphilis and no clinical or historical evidence of the disease.

The treponemal tests have been developed recently. They are (1) the *Treponema Pallidum* Complement Fixation (TPCF); (2) the Reiter Protein Complement Fixation (RPCF); and (3) the *Treponema Pallidum* Immobilization (TPI). The theoretical advantage of any treponemal test is its specificity as compared to the nontreponemal tests, yet at present no treponemal has been found 100 per cent sensitive and/or specific. Each one has certain limitations, and therefore the group must be thoroughly evaluated. The cost of the TPI test in particular and of the TPCF test is such that their use is restricted to special problem cases. On the other hand, the RPCF test can be conducted on a selective basis at a far lower cost. Present evidence as received through limited evaluations by the National Advisory Serology Council shows a very close correlation between the TPI and RPCF tests, pointing the way to the use of the latter as a complementary tool in the serodiagnosis of syphilis.

Treponemal antibodies usually develop in man at the mid-secondary stage, but may appear earlier or be somewhat delayed. Of the treponemal antibodies, according to present information, the Reiter Protein Complement Fixation antibody is the first to appear, and it is followed by the *Treponema Pallidum* Complement Fixation antibody. Then, the *Treponema Pallidum* Immobilization antibody appears. The nontreponemal antibody appears earlier than the treponemal.

The State Hygienic Laboratory is in the process of evaluating and correlating these tests with the clinical and physical findings in the suspected cases. Effective January 1, 1959, all sera reacting to the nontreponemal tests are to be routinely checked by the RPCF test, and further, when indicated, by the TRCF test. In special instances, a TPI test, which at the present time is the court of last appeal, may be indicated.

A reactive treponemal test implies that the patient has or has had syphilis. With rare exceptions, a nonreactive test, on the other hand, in the absence of historical and clinical evidence, implies that the patient does not have syphilis. These tests cannot be used as a guide to therapy, for patients may remain reactive for many years following adequate treatment and clinical cure. This peculiarity of the test makes it extremely valuable in revealing past infections, even though the nontreponemal tests are nonreactive.

The treponemal tests have their greatest value

in differentiating the so-called biologic false positive from the true luetic reaction.

MORBIDITY REPORT FOR MONTH OF NOVEMBER

Disease	1958 Nov.	1958 Oct.	1957 Nov.	Most Cases Reported From These Counties
Diphtheria	0	1	3	
Scarlet fever	128	186	198	Johnson, Polk
Typhoid fever	0	3	0	
Smallpox	0	0	0	
Measles	574	223	48	Linn, Montgomery, Polk, Scott
Whooping cough	13	2	8	Polk, Pottawattamie, Scott
Brucellosis	9	9	11	Dubuque, Linn
Chickenpox	168	67	276	Polk, Pottawattamie, Scott
Meningococcic meningitis	1	3	3	Allamakee
Mumps	171	177	231	Clay, Polk, Scott
Poliomyelitis	7	8	2	Polk
Infectious hepatitis	13	6	4	Marion, Scott, Woodbury
Rabies in animals	14	20	14	Adair, Scott
Malaria	0	0	0	
Psittacosis	0	0	0	
Q fever	0	0	0	
Tuberculosis	52	47	48	For the state
Syphilis	85	126	119	For the state
Gonorrhea	75	103	51	For the state
Histoplasmosis	0	0	0	
Food intoxication	0	2	0	
Meningitis (type unspecified)	1	2	0	Polk
Diphtheria carrier	0	0	0	
Aseptic meningitis	0	7	0	
Salmonellosis	2	6	4	Dubuque, Polk
Tetanus	0	1	0	
Chancroid	0	0	0	
Encephalitis (type unspecified)	3	3	1	Cass, Mills, Pottawattamie
H influenza meningitis	1	0	2	Polk
Amebiasis	1	38	5	Muscatine
Shigellosis	6	3	0	Polk
Influenza	0	6	165,561	

SEMINAR ON CARDIOVASCULAR DISEASES

On February 19, 20 and 21, the Northeast Florida Heart Association and the University of Florida College of Medicine will present their Sixth Annual Seminar on Cardiovascular Diseases, in the Prudential Auditorium at Jacksonville.

The speakers are to be Dr. Samuel A. Levine, of Harvard; Dr. Irving S. Wright, of Cornell; Dr. A. G. Morrow, of Johns Hopkins and the National Heart Institute; Dr. Victor A. McKusick, of Johns Hopkins; and Drs. Max Michael, Jr., William J. Taylor, and Myron W. Wheat, Jr., of the University of Florida College of Medicine.

Further information can be obtained from Dr. Daniel R. Usdin, Northeast Florida Heart Association, 1628 San Marco Boulevard, Jacksonville 7.

ST. LOUIS SESSIONS OF AMERICAN COLLEGE OF SURGEONS

The American College of Surgeons invites surgical specialists and nurses to attend special sessions to be conducted for them at Kiel Auditorium, in St. Louis, during a four-day sectional meeting, March 9, 10, 11 and 12.

Attractions for surgeons will feature hospital clinics and separate programs in general surgery, gynecology and obstetrics, ophthalmic surgery, orthopedic surgery, thoracic surgery and urology.

No program is being scheduled for otolaryngologists at this meeting because of a conflict in meeting dates with one of their specialty societies.

Hotel reservation forms and other information may be obtained from the Department of Organization and Assembly, American College of Surgeons, 40 East Erie Street, Chicago 11.

ALKALINE INJECTIONS RELIEVE ASTHMA

Reducing blood acidity with alkaline injections brings relief to asthmatics on the threshold of death, according to Dr. J. S. Blumenthal, of the University of Minnesota Medical School. The patients, he reported at the AMA Clinical Meeting in Minneapolis, no longer had responded to standard (adrenalin or epinephrine) treatment and were literally being asphyxiated.

He said that a series of studies aimed at finding a solution to the problem of epinephrine-fastness revealed that epinephrine works best when the blood is more alkaline than acid. Consequently, he and his associates injected a sodium lactate solution into the patient's bloodstream in 45 instances, and though no other medication was used, every single patient quickly recovered from his attack.

Help your central office to maintain an accurate mailing list. Send your change of address promptly to Mrs. Lammey, 529-36th Street, Des Moines 12, Iowa.

Woman's Auxiliary News

OUR PRESIDENT SAYS—

As I write this letter for the January WOMAN'S AUXILIARY NEWS, the thrill and excitement of Christmas is in the air. Like every other wife and mother, I have been shopping for gifts, making decorations and baking holiday cakes and cookies. The date pudding that is baking in my oven right now fills the house with a wonderful fragrance.

I find it difficult to project my thoughts beyond the holiday season, but I know that by the time you read this letter we shall have put away our Christmas decorations and ushered in the New Year. I hope that the memory of Christmas will warm and inspire you through the year, until another Christmas comes to weave its magic spell.

As we begin the new year and look forward to a busy spring, I hope that each of you, as a doctor's wife, will give some thought to your Auxiliary. Make an effort to participate in its worthwhile activities for the good of your community. The Auxiliary has the tools and materials to guide your work, and its information and suggestions will be most helpful. All you have to do is ask for those materials.

Plan to enjoy the social functions of our organization and to establish friendships among physicians and their families. As we become friends, we learn to admire and respect each other as individuals. We strengthen our unity and enrich our own lives through the loyalty and devotion we learn to have for each other. Unity is the key to our progress; active Auxiliary members the key to our success.

I found this little paragraph in a recent magazine and thought that the beginning of a new year would be an appropriate time to pass it on to you:

Take time to work; it is the price of success.

Take time to think; it is the source of power.

Take time to play; it is the secret of youth.

Take time to read; it is the foundation of knowledge.

Take time to worship; it is the highway of reverence.

Take time to love; it is the one sacrament of life.

Take time for friendship; it is the source of happiness.

—Anonymous.

MRS. HERBERT C. MERILLAT
President

STATE PRESIDENT, 1958-1959



Mrs. H. C. Merrillat, the 1958-1959 president of the Woman's Auxiliary to the Iowa State Medical Society, was born in Illinois, but spent her early years in the State of Indiana. She was a secretary and a musician before her marriage to Dr. Merrillat in 1933, and she has continued her musical activities since then. Prior to World War II, she was active in service and social organizations in Utah, New York and Washington. While Dr. Merrillat served in the Air Force, Mrs. Merrillat was president of officers' wives clubs at the Topeka Air Force Base and at the Smoky Hill Air Base, in Salina.

The Merrillats have made their home in Des Moines for the past 12 years, and Mrs. Merrillat has been active in many organizations. She has been an officer in PTA and church groups, has been president of the Polk County Medical Auxiliary and has held various positions in the State Auxiliary. She holds memberships in the Iowa Federation of Women's Clubs, the Book Review Club, the Parliamentary Law Club and other music and civic groups.

Her son, Bob, is a law student at Drake University, and her daughter, Kathy, is a junior in the undergraduate school there. She also has two-year-old twin grandsons.

Her interests are many, but music, gardening, dress designing and knitting are her top favorites.

CIVIL DEFENSE IN THE HOME

New Year's, when we are so full of good resolutions, is the best time of the year to think of Civil Defense. We leave national defense to our national leaders and to the commanders of our Armed Forces, but it is our job to protect the health and happiness of our own children and our own homes. As wives and mothers, we are the only ones suited to that task.

All of us have experienced failures of electric power. If there was a flashlight or a candle nearby, it was only a matter of moments until the fear and confusion of total darkness was dispelled. Or perhaps our accustomed lights returned almost immediately. But in a major emergency, caused either by an enemy attack or by a natural disaster, we must be prepared to avert panic as well as to meet our families' everyday needs under difficult circumstances.

Because I live in the very northernmost part of Iowa, I know what it is to be snowed-in for a couple of days. I have found that if there is plenty of food and fuel, the children enjoy their new experience, and the whole family is drawn closer by being cut off from the outside world for a time. A long period of cold and darkness, and perhaps hunger, would make us all pretty miserable.

As the new year starts, let's each of us try to imagine her house cut off from the world for one week. Would there be enough food and fuel, or do you always "scrape the bottom of the barrel" before getting more supplies? As a test, when you are about to go to the grocery store next time, *just don't go*. Stay home and make do with what you have. If each of us were to do this occasionally, she would see to it that her pantry was filled with the items that are most important to her own family. Perhaps it would contain an extra box of that special cereal, the only kind that the baby will eat, or some chocolate syrup for the youngsters' regular bedtime milk, or maybe a can of cat food for that other member of the family.

No one from Washington or Des Moines can warn you specifically to lay in supplies of the things your family would need most in an emergency. Only you can pick out the items that would make isolation fun, rather than a nightmare. The same rule applies if any member of your family needs

a special kind of medicine. If there is someone with asthma, heart trouble, diabetes or another disability requiring constant medication, lay in a supply of it along with your other provisions.

In the case of natural disasters, the only thing for you to guard against is panic. The well-stocked pantry, or trunk in the basement, the extra stove, the candles, the medicine, and the first-aid kit and the training necessary for using it—these are all parts of the preparations we should make. By taking such action, we make ourselves better wives and mothers, and if we feel sure of ourselves our children will feel secure.

The points that I have discussed here have all been personal—personal preparations for personal defense. Next month I shall review a statewide plan for mass defense.

MRS. R. J. COBLE, Lake Park
State Civil Defense Chairman

COUNTY AUXILIARIES

Dallas-Guthrie

The Dallas-Guthrie Medical Auxiliary met at the McDonald Tea Room in Perry on November 11 for luncheon. The following officers were elected for 1959: Mrs. R. J. Peterson, president-elect; Mrs. R. F. Deranleau, first vice-president; Mrs. H. W. Smith, second vice-president; Mrs. C. E. Porter, secretary; and Mrs. Herbert Neff, treasurer. Mrs. E. E. Lister will be president this year.

Mrs. Harriett Tripp, the Perry school nurse, led a most interesting and informative discussion.

Dubuque

The Auxiliary to the Dubuque County Medical Society held its annual sale of handicraft articles made by the crippled on November 17-19 at Roshek's Department Store, in Dubuque, in cooperation with the Iowa Society for Crippled Children and Adults. Mrs. Clarence Stroud was chairman of the sale, and she was assisted by Mrs. V. K. Nakashima, president of the Auxiliary.

The sale provides the crippled and handicapped an outlet for their work. Members of the Auxiliary serve as salespeople, but all of the receipts go to the persons who made the articles.

SAFETY FIRST

An ounce of prevention is worth tons of fire equipment.

DISTRICT MEETINGS

On December 3, a group of doctors' wives from the Third and Fourth Districts were entertained at luncheon in the home of Mrs. Wayland Hicks, in Sioux City. Mrs. Lester Hegg, of Rock Valley, was the assisting hostess. Mrs. Hicks is councilor for the Fourth District, and Mrs. Hegg is councilor for the Third District.

A program of readings and music was presented, and Mrs. Merillat and Mrs. D. H. King spoke briefly. Later in the afternoon, Mrs. Hicks entertained the members of the Woodbury County Auxiliary at a tea in honor of the state president. Mrs. E. A. Larsen, of Centerville, president-elect, and Mrs. R. P. Mason, of Des Moines, first vice-president, were other state officers who attended this lovely affair.

Doctors' wives in District Nine met for luncheon on November 18 in Oskaloosa. Mrs. L. F. Catterson is councilor for that district, and she made the arrangements for that meeting, with the assistance of Mrs. G. S. Atkinson. Mrs. Merillat spoke briefly, and as at the Sioux City meeting, Mrs. Larsen and Mrs. Mason were also present.

ESSAY CONTEST

Though it may not be too late, there no longer is time for county Auxiliary officers and members-at-large to waste before getting the 1959 Essay Contest started in the high schools of their respective areas. It is our hope that every student in Iowa will have an opportunity to enter this competition.

At the national level, where the contest is sponsored by the Association of American Physicians and Surgeons, the first prize is to be \$1,000, and there are to be seven additional prizes of \$75 each. At the state level, the Iowa State Medical Society is again offering first, second and third prizes of \$100, \$50 and \$25. Perhaps county Auxiliaries or other sponsors may be willing to offer local prizes.

The contestants may write on either of two topics: (1) "The Advantages of Private Medical Care," or (2) "The Advantages of the Private Enterprise System." Library packets have been sent to each county Auxiliary president, but if members want additional sets or desire other information, they should write either to me or to the State Auxiliary office, 529 Thirty-sixth Street, Des Moines 12.

We are especially anxious to have members-at-large choose the essay contest as their individual project.

MRS. R. F. NIELSEN
919 Washington St., Cedar Falls
Essay Contest Chairman

BE AN INFORMED MEMBER

An informed member serves her community best, and readers of THE BULLETIN are the best-informed of all.

THE BULLETIN furnishes interpretations of the problems of the medical profession, and of the policies that the AMA and the National Auxiliary have adopted regarding them. Thus, it serves as a constant reference and guide to Auxiliary members in coordinating their activities with those of national organizations of doctors and doctors' wives.

Subscriptions to THE BULLETIN cost just \$1 per year, and there are four numbers: September (Program Issue), January (Conference Issue), March (State Presidents' Issue) and May (Convention Issue). Thus, during each year, it provides the programs of committee chairmen, convention plans and proceedings, addresses, summaries of conferences, information on legislation, mental health programs, AMEF, and medical education week, rural health reports, and timely editorials.

Subscriptions can be purchased through county BULLETIN chairmen, from Mrs. H. V. Kahler, of Reinbeck, the state chairman, or through the State Auxiliary's office in Des Moines.

DRIVER'S LICENSE

Edgar A. Guest

*This is your license to drive a car;
To be watchful ever where children are;
To travel the streets and keep in mind
That people are sometimes deaf and blind
And lame and feeble and care distraught
And accidents come from lack of thought.*

*This is your license to drive and so
All that it means I would have you know.
Though it isn't printed in language plain
It's an affidavit that you are sane;
And it also tells that your state has found
Your faculties clear and your body sound;
It says that your state has faith in you;
That never a wrongful act you'll do;
That you know how dangerous hills can be;
That you'll pass no car where you cannot see
A long, clear stretch of the thoroughfare;
And wherever you're going you'll drive with care.*

*Carry your license to drive with pride,
For how shamed you'd be were it once denied!
It is sworn-to proof that the rules you know,
That you're neither stupid nor witted-slow;
That your state through its officers finds you are
Fit to be trusted to drive a car.*

WOMAN'S AUXILIARY TO THE IOWA STATE MEDICAL SOCIETY

President—Mrs. H. C. Merillat, 116 Lincoln Place Drive, Des Moines 12
President-Elect—Mrs. E. A. Larsen, Centerville
Secretary—Mrs. Wm. C. Shinkle, 307 49th St., Des Moines 12
Treasurer—Mrs. E. A. Vorisek, 6205 Woodland Rd., Des Moines 12

Editor of THE NEWS—Mrs. E. T. Burke, 601 S.W. 42nd Street, Des Moines 12
Asst. Editor of THE NEWS—Mrs. D. F. Crowley, Jr., 663 44th Street, Des Moines 12

Blue Shield States Its Case

National Enrollment and the Partnership Between Blue Cross and Blue Shield

JAMES E. STUART

NEW YORK CITY

PROBABLY WE CAN all agree on certain facts which appear to be self-evident:

1. Blue Cross and Blue Shield are a necessary partnership—each partner indispensable to the other and to the community, since Blue Shield has come of age and expects to be treated as an equal.

2. The central importance of the doctor in the success of Blue Cross and Blue Shield operations cannot be overestimated. His understanding and support of their joint programs are of first importance to success. Liaison between the medical profession and Blue Cross should be close and effective at the policy and operational levels, and should not be limited just to attempts at control of cost and utilization of hospital care. In concert with Blue Shield, Blue Cross should open direct channels of communication with the medical profession to achieve complete understanding and mutual support.

3. The pressures that exist today—from government, labor and industry, and from the competition of private insurers—place the voluntary hospitals and the private practice of medicine in the same boat; the tensions and conflicts existing today between the private doctor of medicine and the hospital administrator ought to be eliminated in the public interest.

4. The voluntary hospital system and the private practice of medicine as we have known them can be maintained in our society only through an adequate and broadly based plan of voluntary prepayment, available to the total self-supporting population at a price which the average working man can afford, and which may be continued for the lifetime of the individual.

5. The role and responsibility of the partnership of Blue Cross and Blue Shield in this area is incapable and cannot be questioned.

6. Locally and nationally, we are not adequately meeting the need today. In fact, we are temporarily losing the competitive battle to the insurance industry, and the government is assuming an expanding responsibility in providing health care.

7. Because of rapidly increasing cost and lack of voluntary self-administered controls, we now risk pricing our benefits beyond the reach of people, and thus requiring public regulation and control, if not public administration of health programs.

THE "BLUE" PLANS MUST CONTINUE COOPERATING

Let's look at history for a moment. The developments of Blue Cross and Blue Shield programs have been largely parallel throughout the country. The conceptions and births of the movements were similar. The purpose, objective and motivation behind one organization were almost identical with those of the other. Through a voluntary-prepayment organization, each sought to make it possible for people to prepay their costs of health care. Each set up a financial mechanism through which subscribers' money could be used to their best advantage for protection in time of need. Each sought to make the services of its sponsoring organizations effective in reaching the largest possible number of people at the lowest possible cost.

Both Blue Cross and Blue Shield have followed the same principles of operation. These include sponsorship and approval by the providers of the service; coverage and service for the entire com-

This is the third of a series of articles discussing health insurance problems. The papers, some of them by Iowans and others by physicians from outside the state, are intended to provide a broad, factual base for really informed opinion.

Participation in Blue Shield requires certain responsibilities of its members. (1) They must keep informed. (2) They must actively search out informed and dedicated persons to direct Blue Shield affairs. (3) They must learn not to use Blue Shield as a buffer between disagreeing segments of the medical profession. (4) They must come to realize that Blue Shield is regulated by insurance laws and principles. (5) They must rededicate themselves to the service principle on which Blue Shield was founded. (6) They must believe in Blue Shield and make the weight of their ideals and their morality felt in determining its aims.

Mr. Stuart is executive vice-president of Blue Cross Association.

munity, with the subscribers' rates generally related to the experience of the total community; equal protection for the entire family; continuous coverage at the option of the subscriber throughout life; and the application of the principles of service benefits in most areas.

An essential characteristic of the Blue Cross-Blue Shield operation has been its non-profit character. Legally, this means that we have no third party owners or stockholders taking a private profit out of our endeavors to provide patients with the services they need. But it does not mean that we have a *non-profitable* or *profitless* operation. On the contrary, in our constant drive to cut our operating costs and to deliver the greatest possible value of service per dollar, we are as profit-minded as any segment of business or industry. The difference is in who gets the profit. In the case of Blue Cross and Blue Shield, the profit belongs to the subscriber and to the community, for it is their individual and collective needs for medical and hospital care that we are trying to meet. We operate in the interest of the subscriber and the community. Whenever or wherever we fail to operate for their profit, we no longer have a reason for being.

With few exceptions, joint or closely-related administration of Blue Cross and Blue Shield has been the rule. The packaging of programs together as one program has been the pattern. The partnership of the two organizations—the marriage of the two programs—was sought and accomplished by the founders of each. In the public mind today, Blue Cross and Blue Shield are merged as one—a single operating entity to prepay the costs of needed health care.

For such a marriage partnership to succeed, there can be no secrets, suspicion or hidden moves. Nor can there be constant domination by one partner over the other. So far as the public is concerned, we are one. Our marriage cannot be dissolved. But as in all marriages, there have been misunderstandings and local disagreements. In a few instances, there have been legal separations and divorce from bed and board. Whenever this has occurred, each of the partners has lost—the public has lost—and nobody has gained.

At the national level today, there is less misunderstanding and less friction, and there is a greater desire on the part of Blue Cross and Blue Shield to work together for the public good than at any time in our history. Nationally, if we are to succeed in accomplishing our objectives, coordinated effort is essential. It is indispensable.

In many areas of joint activity, we have made significant progress. In national advertising, we have an outstanding and successful program which has been in operation for several years. In our relations with government, we have worked closely together. In our approach to national organizations where we must present a united front and a sat-

isfactory joint program, we have made some, but not enough, progress.

OUR NATIONAL PACKAGE MUST BE ATTRACTIVE

Our most important and immediate job is the development of a national product—a national package—which can be presented competitively to national accounts. Because of wide variations in local patterns of benefits and rates, we have always been handicapped in presenting an understandable and satisfactory program to the national employer or to the national labor organization. With our benefit and rate structure related to local needs and local costs, the difficulty in complying with national demands for uniformity has been evident from the beginning.

To convince the national employer to go along with local rates and local benefits because his employees are a part of the local community has not always been possible. The job of handling multiple billings from a large number of Blue Cross and Blue Shield plans with varying rates and varying benefits, with several rate increases coming during each year, has often completely destroyed any such feeling of local responsibility on the part of the national employer. The flood of administrative details required to keep up with changes in the program and to keep employees throughout the country protected under rapidly changing local patterns of benefits and rates has been too much for him. Therefore, without waiting for us to work out consolidated billing arrangements and rate guarantees, he has turned to the insurance industry, and found it willing and anxious to provide uniformity of benefits and rates for all his employees throughout the country, regardless of wide variations in local costs of care.

More than 60 per cent of the people of this country are employed in industries which might be termed "national" in that they have employees in more than one plan area. Despite that fact, Blue Cross and Blue Shield have not been quick to devise a satisfactory national program. For this reason, we now find ourselves on the defensive on the membership front.

Our growth during the past five years, though considerable, has been overshadowed by a more rapid increase in the number of persons covered by commercial insurance. In industries where we had been partially established, we have lost ground, and our enrollment in some prestige accounts is being threatened.

For the first time in our brief history, we find the insurance industry successfully competing with us at all levels. In the area of benefits, the commercial carriers are providing all or more than we can offer for large national accounts at rates which appear to be lower than those of the Blue Cross-Blue Shield package. For leading national industries, we now must admit that the insurance

companies are strong competitors on rates and benefits.

At the same time, the large insurance company offers the national employer an administrative and fiscal mechanism which appears simpler, more efficient and less expensive than the composite of our local Blue Cross and Blue Shield administrative agreements.

But more important to Blue Cross and Blue Shield, and in the long run more alarming to the total community, is the competition not in benefits, not in rates, not in administration, but in the realm of ideas—in the public acceptance of a new concept, in the creation of a new public image.

For a long time, Blue Cross and Blue Shield were the standard-setting programs in this country, the yardsticks against which all other programs of health protection were measured to determine adequacy. In the last few years, the insurance industry has developed new and exciting ideas which have been presented and often accepted as great forward steps, not only in widening the scope of benefits, but also in setting up controls on utilization and cost.

First, "major medical" was devised. Then a refinement of that program called "comprehensive medical" was brought to the attention of the public with effective promotion. To the upper-income group, and to the management of industry generally, these new programs not only have appeal, but are being used as the yardstick for the measurement of the efficiency, the scope and the breadth of coverage of other prepayment programs.

The present competition of these programs with Blue Cross and Blue Shield cannot be overestimated. To compete successfully, we must:

1. Extend our usual benefit pattern to provide necessary new coverage, particularly in the area of care outside of the hospital. Admission to a hospital can no longer be a prerequisite for benefits under a prepayment plan.

2. Establish realistic rates for national accounts and develop a continuous rate-making service. In the past, our rate-making for national enrollment has been too informal, too casual, too inexpert, and because the scientific job of collecting and analyzing available data has not been done, our rates have often been too high.

3. Set up for national accounts more economical administrative organizations and more efficient claim administration procedures in order to be competitive with the retentions offered by the insurance companies.

4. Create a new national image of Blue Cross and Blue Shield through effective community action with appeal to management and to labor as the prepayment method which protects their economic and social interests as well as protects the financial interest of the providers of health services.

The fact is that for the national group we have

been unable to offer the national program which is demanded and which must be provided if Blue Cross and Blue Shield are to stay in the national market. Here, Blue Shield has far more difficulties to overcome than has Blue Cross.

By reason of its history, the nature of its coverage and local variations of service and indemnity in the different plan areas, Blue Shield has great problems to solve in benefits, rates and administrative organization. For large national accounts, where Blue Cross administrative cost may sometimes seem high in comparison with insurance companies' retentions, Blue Shield's is much higher. The problem of creating, rating and administering a national contract is far more difficult for Blue Shield than for Blue Cross. A uniform, national pattern of rates and benefits can be devised by Blue Cross with comparative ease. But to secure such a national product for Blue Shield requires the "removal of mountains." Yet, real progress toward doing just that has been made in the last six months.

Blue Shield can now provide a uniform scope of benefits nationwide. When the program devised by the Blue Shield Commission and generally approved by the affiliated plans is successfully implemented, a national Blue Shield program of service benefits where available and a satisfactory indemnity arrangement elsewhere can be offered and rated through Health Service, Inc. and Medical Indemnity of America. Then the basic underwriting can be taken off by each plan, and after this basic coverage has been assumed by the local plan, HSI-MIA can directly underwrite the expanded and extended coverage necessary. The underwriting capacity of HSI-MIA can then be made available for extension of benefits into areas where local Blue Cross and Blue Shield plans have difficulty in moving. The determination on the part of the Blue Shield plans and the Blue Shield Commission to move with resolution in this direction is a long step toward the solution of our national-account problem.

WE MUST REDEDICATE OURSELVES TO OUR ORIGINAL AIMS

The competitive situation in which we find ourselves—the climate in which we work—requires that we develop a national program which captures the interest and meets the needs of people, and which more closely identifies Blue Cross and Blue Shield with the public. We must demonstrate to the national employer, as well as to the local community, that Blue Cross and Blue Shield provide the best method of bringing the services of hospitals and doctors to people when they are ill, and that the public's money, paid through Blue Cross and Blue Shield, goes further toward paying the bill and meeting the needs of the individual subscriber than if paid through any other mechanism. Such a demonstration and such assurance to

the public can come only through a prepayment organization that has a relationship with those who are responsible for providing the services.

When management discovers that the new programs of the insurance industry are inflationary, and as wage earners find the co-insurance provisions burdensome, management, labor and the community will look to Blue Cross and Blue Shield for leadership in providing a community mechanism through which hospital and medical services can be delivered efficiently, economically and effectively for people, with the necessary voluntary controls imposed upon themselves by the providers of the service.

If voluntary prepayment is to continue in this country, the concepts and principles upon which Blue Cross and Blue Shield were established must be developed to their fullest extent. Through community action, and through the wise exercise of the community responsibility which Blue Cross and Blue Shield have assumed, people must be assured of an efficient and effective method of health protection.

Prepayment is here to stay. Whether it will be voluntary or compulsory will depend upon the ability of the voluntary system to meet the needs of people at costs which they can afford. The public has come to depend upon a third party to pay for hospital and medical care at the time of need. In every major country except the United States (we can include Canada after January 1, 1959), the third party is the government. To prevent that happening here, we must do a better job in meeting the social and economic needs of people for health care. These needs can be met only through the operation of the principles and the application of the concepts of Blue Cross and Blue Shield. They cannot be met through the mechanism of the commercial insurance industry unless that industry adopts the principles under which we operate, and that is not likely to happen. What is likely is that social pressures and tensions will continue to build up, and that needs will be unmet to the point where political action will be deemed necessary or expedient. Then the choice of a program will be made by the voters at the polling places.

For us to have a compulsory health insurance program in this country requires no change in our basic constitutional law. We have already seen the adoption of two unwritten amendments to the Constitution. The first such amendment was that no state might secede from this union. That was not proposed by a two-thirds vote of Congress and ratified by three-fourths of the states, but was initiated on the field of battle and ratified by the fortunes of the bloodiest civil war in history.

The second unwritten amendment, which has now been implemented in every area except health, is that government has a responsibility for the welfare of the individual citizen. That, again,

did not follow the ordinary constitutional process of initiation and ratification. Yet it is as much a part of our basic law as is any written part of the Constitution.

In the area of health, the implementation of that unwritten amendment has been so far avoided by providing prepaid service to people voluntarily. Its ultimate implementation as a part of our Social Security System is inevitable unless we in Blue Cross and Blue Shield are successful in doing the job we set out to do—to provide for the national community the method of prepayment which serves people adequately in the most efficient and economical manner.

In the strengthened partnership between Blue Cross and Blue Shield, with an expanded program of service by each, with an intelligent use of our national underwriting agencies—Health Service, Inc. and Medical Indemnity of America—we can and must provide a program that will not only be competitive with the insurance companies, but will assure management, labor and the community the most effective and efficient use of the public's prepayment dollar.

FAVORABLE REPORTS ON NEW TRANQUILIZER

An ocular surgeon and an orthopedist recently made reports crediting the new Schering tranquilizer Trilafon (perphenazine) with high effectiveness in their respective fields. Dr. Ray H. Nielsen, of North Hollywood, announced in the *AMERICAN JOURNAL OF OPHTHALMOLOGY* that not one of 50 ocular surgery patients to whom he gave perphenazine during and after their operations experienced nausea or vomiting, and he said that the success of such procedures often depends upon the avoidance of stomach upsets during the recovery period.* The patients' ages ranged from 14 to 86.

Dr. Nielson noted that some authorities have expressed the opinion that the introduction of tranquilizing drugs constitutes one of the most important recent advances in ocular surgery.

In the *JOURNAL OF THE AMERICAN GERIATRICS SOCIETY*, Dr. Edward Settler, of Brooklyn, reported on a series of 21 ambulatory middle-aged patients and 29 hospitalized elderly ones to whom he gave perphenazine in addition to adrenal steroids for the relief of pain and spasm associated with arthralgias.** "The degree of relief," he said, "was significantly greater when both were used than when the steroids were used alone." Recovery, he found, occurred 30 or 40 per cent more rapidly when the emotional component was reduced by a suitable tranquilizing drug, and patients endured the period of disability with more equanimity.

* Nielsen, R. H.: Use of perphenazine in ocular surgery. *AM. J. OPHTH.*, 46:345-351, (Sept.) 1958.

** Settler, E.: Treatment of acute and chronic arthralgias with tranquilizing agent (Trilafon) in addition to prednisone or prednisolone. *J. AM. GERIATRIC SOC.*, 6:749-753, (Oct.) 1958.

Coming Meetings

In State

- Feb. 17-20 **Refresher Course for the General Physician (Iowa Chapter of the American Academy of General Practice and the SUI College of Medicine).** University Hospitals, Iowa City
- Feb. 24-26 **Annual Meeting, Sioux Valley Medical Association,** Sheraton-Martin Hotel, Sioux City
- Feb. 24-26 **Annual Meeting, Sioux Valley Medical Association,** Sheraton-Martin Hotel, Sioux City
- Feb. 24-27 **National League for Nursing, Inc.** Hotel Savery, Des Moines
- Feb. 27-28 **Annual Pediatric Conference, Raymond Blank Memorial Hospital for Children,** Des Moines
- Mar. 19 **Neurology Conference.** University Hospitals, Iowa City

Out of State

- Feb. 2-3 **Treatment of Varicose Veins.** Cook County Graduate School of Medicine, Chicago
- Feb. 2-4 **American College of Surgeons, Sectional Meeting.** Shamrock Hilton Hotel, Houston, Texas
- Feb. 2-4 **Current Research in Endocrinology (American College of Physicians).** Clinical Center Auditorium, National Institutes of Health, Bethesda, Maryland
- Feb. 2-5 **Course for Physicians in General Practice (U. of California).** Mount Zion Hospital, San Francisco
- Feb. 2-6 **Vaginal Approach to Pelvic Surgery.** Cook County Graduate School of Medicine, Chicago
- Feb. 2-13 **General and Surgical Obstetrics.** Cook County Graduate School of Medicine, Chicago
- Feb. 2-13 **Surgical Technic.** Cook County Graduate School of Medicine, Chicago
- Feb. 4 **Physiological and Clinical Consideration of the Nervous System.** U.C.L.A., Los Angeles
- Feb. 6-7 **American College of Radiology.** Drake Hotel, Chicago
- Feb. 7-8 **Annual Meeting, American College of Physicians, Southern California Region.** El Mirador Hotel, Palm Springs, California
- Feb. 7-8 **Fourth Annual Postgraduate Session, Anesthesia Section,** Los Angeles County Medical Association, Los Angeles County Medical Building, Los Angeles
- Feb. 7-8 **Forum for the Younger Specialists and Residents (Los Angeles Obstetrical & Gynecological Society).** Ambassador Hotel, Los Angeles
- Feb. 7-10 **Fifty-fifth Annual Congress on Medical Education and Licensure (AMA Council on Medical Education and Hospitals, Advisory Board for Medical Specialists and Federation of State Medical Boards of the United States).** Palmer House, Chicago
- Feb. 9-11 **American Academy of Allergy.** Morrison Hotel, Chicago
- Feb. 9-11 **American Academy of Forensic Sciences.** Drake Hotel, Chicago
- Feb. 9-11 **Symposium on Radiology.** U. of Kansas School of Medicine, Kansas City, Kansas
- Feb. 9-13 **Recent Advances in Cardiovascular Diseases (American College of Physicians).** Mount Sinai Hospital, New York City
- Feb. 9-13 **Fourteenth Annual Series of Lectures, Obstetrical and Gynecological Assembly of Southern California.** Ambassador Hotel, Los Angeles
- Feb. 9-20 **Office and Operative Gynecology.** Cook County Graduate School of Medicine, Chicago
- Feb. 9-Mar. 23 **Advanced Electrocardiography.** U.C.L.A., Los Angeles
- Feb. 10-13 **Mid-South Postgraduate Medical Assembly.** Hotel Peabody, Memphis, Tennessee
- Feb. 11 **Urology.** U. of Oklahoma Medical Center, Oklahoma City

- Feb. 11-13 **American Academy of Occupational Medicine.** Sheraton-Plaza Hotel, Boston
- Feb. 12-14 **Society of University Surgeons.** Denver
- Feb. 13 **Management of Surgical Emergencies.** U.C.L.A., Los Angeles
- Feb. 13-14 **Annual Clinical Conference,** Chicago Ophthalmological Society, Drake Hotel, Chicago
- Feb. 14 **Management of Medical Emergencies.** U.C.L.A., Los Angeles
- Feb. 15-25 **American Otorhinologic Society for Plastic Surgery, Inc.** Del Prado Hotel, Mexico City
- Feb. 16-17 **Symposium on Hematology.** U. of Kansas School of Medicine, Kansas City, Kansas
- Feb. 16-18 **Seventh Annual Symposium on Metabolic Problems, Alameda-Contra Costa Medical Association and the Institute for Metabolic Research.** Highland-Alameda County Hospital, Oakland
- Feb. 16-18 **Congress on Industrial Health.** Netherland Hilton Hotel, Cincinnati
- Feb. 16-20 **Fourth Annual Postgraduate Course on Diseases of the Chest (American College of Chest Physicians).** Sir Francis Drake Hotel, San Francisco
- Feb. 16-20 **Dermatology and Syphilology for General Physicians.** N.Y.U., N.Y.C.
- Feb. 16-27 **Surgical Technic.** Cook County Graduate School of Medicine, Chicago
- Feb. 17-20 **Colorado State Medical Society, Midwinter Clinical Session.** Shirley-Savoy Hotel, Denver
- Feb. 18 **Physical and Clinical Aspects of the Kidney.** U.C.L.A., Los Angeles
- Feb. 18-19 **Symposium on Peripheral Vascular Disease.** U. of Kansas School of Medicine, Kansas City, Kansas
- Feb. 19-21 **Central Surgical Association.** Montreal, Canada
- Feb. 19-21 **First Chicago Postgraduate Course in Arthritis and Related Conditions (Five Chicago Medical Schools, Chicago Rheumatism Association, Chicago Orthopedic Society and Illinois Chapter, Arthritis and Rheumatism Foundation).** Thorne Hall, Northwestern University, Chicago
- Feb. 19-21 **Sixth Annual Seminar on Cardiovascular Diseases (Northeast Florida Heart Association and College of Medicine of the University of Florida).** Prudential Auditorium, Jacksonville
- Feb. 20-21 **Allied Health Course on Hearing and Speech.** U. of Kansas School of Medicine, Kansas City, Kansas
- Feb. 21 **Ophthalmology.** Stanford University Hospital, Palo Alto, California
- Feb. 21-22 **Neurology for Physicians.** Standard University Hospital, Palo Alto, California
- Feb. 22-23 **Family Endocrinology.** U. of California Medical Center, San Francisco
- Feb. 22 **Medicine in the Jet and Space Age.** U. of California Medical Center, San Francisco
- Feb. 22-23 **Family Endocrinology.** U. of California School of Medicine Medical Center, San Francisco
- Feb. 22-24 **Treatment of Hernia (Stanford U. School of Medicine).** Palo Alto, California
- Feb. 22-25 **California Medical Association Annual Meeting.** Sheraton-Palace Hotel, San Francisco
- Feb. 23-24 **Symposium on the Heart: Electrocardiography.** U. of Kansas School of Medicine, Kansas City, Kansas
- Feb. 23-25 **Cardiovascular Diseases for General Physicians.** U. of Minnesota, Minneapolis
- Feb. 23-27 **Recent Advances in Internal Medicine (American College of Physicians).** Pennsylvania Hospital Auditorium, Philadelphia
- Feb. 23-Mar. 6 **General and Surgical Obstetrics.** Cook County Graduate School of Medicine, Chicago

- Feb. 25-26 Symposium on Neurology and Neurosurgery. U. of Kansas School of Medicine, Kansas City, Kansas
- Feb. 26 Physical Medicine and Rehabilitation. U. of Nebraska College of Medicine, Omaha
- Feb. 26-28 Sectional Meeting, American College of Surgeons. Hotel Vancouver, Vancouver
- Feb. 26-28 Thirteenth Annual Symposium on Fundamental Cancer Research (M. D. Anderson Hospital and Tumor Institute). Houston
- Feb. 27-28 Scientific Sessions, Association of Clinical Scientists. Mobile, Alabama
- Mar. 2-3 Treatment of Varicose Veins. Cook County Graduate School of Medicine, Chicago
- Mar. 2-4 Allied Health Course in Nursing Service. U. of Kansas School of Medicine, Kansas City, Kansas
- Mar. 2-4 Pediatrics for General Physicians. U. of Minnesota, Minneapolis
- Mar. 2-5 Twenty-second Annual Meeting, New Orleans Graduate Medical Assembly. Roosevelt Hotel, New Orleans, Louisiana
- Mar. 2-6 Advanced Electrocardiography. U. of Oklahoma Medical Center, Oklahoma City
- Mar. 2-6 Blood Vessel Surgery. Cook County Graduate School of Medicine, Chicago
- Mar. 2-6 Surgery of the Colon & Rectum. Cook County Graduate School of Medicine, Chicago
- Mar. 2-12 Mediclinics of Minnesota, Fourth Annual Refresher Course of Postgraduate Medical Education. Fort Lauderdale, Florida
- Mar. 2-13 Diagnostic X-ray. Cook County Graduate School of Medicine, Chicago
- Mar. 2-13 Gastroscopy & Gastroenterology. Cook County Graduate School of Medicine, Chicago
- Mar. 4-6 Allied Health Course in Nursing Education. U. of Kansas School of Medicine, Kansas City, Kansas
- Mar. 5 Postgraduate Clinic, Michigan Academy of General Practice. Sheraton-Cadillac Hotel, Detroit
- Mar. 5-6 Third Annual Refresher Course, Massachusetts Society of Anesthesiologists. Boston
- Mar. 5-7 Fourteenth National Conference on Rural Health (American Medical Association's Council on Rural Health). Broadview Hotel, Wichita, Kansas
- Mar. 6-7 Diagnostic Radiology. U.C.L.A., Los Angeles
- Mar. 7 Obstetrical-Gynecological Symposium (Oklahoma City Obstetrical & Gynecological Society). U. of Oklahoma Medical Center, Oklahoma City
- Mar. 8-9 American Broncho-Esophagological Association. The Homestead, Hot Springs, Virginia
- Mar. 8-9 American Laryngological Association. The Homestead, Hot Springs, Virginia
- Mar. 8-12 Alumni Postgraduate Convention, 1959, College of Medical Evangelists. Biltmore Hotel, Los Angeles
- Mar. 9 National Multiple Sclerosis Society. New York City
- Mar. 9-11 Symposium on Pediatrics. U. of Kansas School of Medicine, Kansas City, Kansas
- Mar. 9-12 Sectional Meeting, American College of Surgeons. Kiel Auditorium, St. Louis, Missouri
- Mar. 9-12 Southeastern Surgical Congress. Deauville Hotel, Miami Beach
- Mar. 9-13 Vaginal Approach to Pelvic Surgery. Cook County Graduate School of Medicine, Chicago
- Mar. 9-20 Fractures and Traumatic Surgery. Cook County Graduate School of Medicine, Chicago
- Mar. 9-20 General and Surgical Obstetrics. Cook County Graduate School of Medicine, Chicago
- Mar. 10-12 American Laryngological, Rhinological and Otolological Society. The Homestead, Hot Springs, Virginia
- Mar. 11 Diagnosis and Management of Common Allergic Disorders. U. of Oklahoma Medical Center, Oklahoma City
- Mar. 12-13 Ophthalmology and Otolaryngology Symposium (Oklahoma City Society of Ophthalmology and Otolaryngology). U. of Oklahoma Medical Center, Oklahoma City
- Mar. 13-14 American Otolological Society. The Homestead, Hot Springs, Virginia
- Mar. 13-14 Ear, Nose and Throat. U.C.L.A., Los Angeles
- Mar. 14 Trauma for General Physicians. U. of Minnesota, Minneapolis
- Mar. 14-15 Fourth Annual Meeting, Southwestern Society of Nuclear Medicine. Roosevelt Hotel, New Orleans
- Mar. 15-20 Graduate Instruction Course and Annual Congress, American College of Allergists. Fairmont Hotel, San Francisco
- Mar. 16-18 Internal Medicine for Internists. U. of Minnesota, Minneapolis
- Mar. 16-21 Medical Technology. U. of Colorado Medical Center, Denver
- Mar. 16-21 Surgery of the Hand (N.Y.U.). Beekman-Downtown Hospital, New York City
- Mar. 16-27 Electrocardiography, Basic Course. Cook County Graduate School of Medicine, Chicago
- Mar. 16-27 Office and Operative Gynecology. Cook County Graduate School of Medicine, Chicago
- Mar. 17-19 National Health Council. Palmer House, Chicago
- Mar. 17-31 Orthopedic Aspects of the Treatment of Rheumatic Disorders. N.Y.U., N.Y.C.
- Mar. 18 American Society of Facial Plastic Surgery. New York City
- Mar. 18 Physical and Clinical Aspects of the Nervous System. U.C.L.A., Los Angeles
- Mar. 19-21 Section of General Practice, British Columbia Division, Canadian Medical Association. Harrison Hot Springs Hotel, Harrison Hot Springs, B. C.
- Mar. 19-21 Hematology and Hypertension. U. of Wisconsin Medical School, Madison
- Mar. 20-21 Regional Medicolegal Conference, American Medical Association. District of Columbia Medical Society Headquarters, Washington, D. C.
- Mar. 20-21 Ninth Annual Postgraduate Medical and Surgical Convention, Pioneers Memorial Hospital, U. of Colorado Medical School, Denver
- Mar. 20-22 Fluid and Electrolyte Balance (U. of Southern California). Hotel Statler, Los Angeles
- Mar. 20-24 Diagnostic Radiology. U. of California, San Francisco
- Mar. 21 North Pacific Society of Internal Medicine. Seattle
- Mar. 23-24 Symposium on Cardiac Auscultation. U. of Kansas School of Medicine, Kansas City, Kansas
- Mar. 23-25 Refresher Course in Allergic Conditions. N.Y.U., N.Y.C.
- Mar. 25-26 Management of Sports Injuries. U.C.L.A., Los Angeles
- Mar. 26 Obstetrics (U. of Nebraska College of Medicine). Lincoln General Hospital, Lincoln
- Mar. 27-28 Symposium on Adrenal Steroids. Stanford University, San Francisco
- Mar. 30-Apr. 1 Thirty-sixth Annual Meeting, American Orthopsychiatric Association. Sheraton-Palace Hotel, San Francisco
- Mar. 30-Apr. 1 Gallbladder Surgery. Cook County Graduate School of Medicine, Chicago
- Mar. 30-Apr. 1 Southwestern Surgical Congress. New Brown Palace Hotel, Denver
- Mar. 30-Apr. 3 Basic Concepts of Water and Electrolyte Balance for General Physicians. U. of Minnesota, Minneapolis
- Mar. 30-Apr. 3 Twelfth Annual Postgraduate Course on Diseases of the Chest (American College of Chest Physicians). Sheraton Hotel, Philadelphia
- Mar. 30-Apr. 10 Urology. Cook County Graduate School of Medicine, Chicago
- Mar. 30-Apr. 12 Seventh Bahamas Medical Conference. British Colonial Hotel, Nassau, Bahamas
- Mar. 31 Immunization. Children's Hospital, University of California, San Francisco
- Mar. 31-Apr. 5 International Committee of Military Medicine and Pharmacy. Paris, France

The Role of the Practicing Physician In Public Health

JOSEPH G. MOLNER, M.D., M.P.H.

DETROIT, MICHIGAN

SOME YEARS AGO, I had a share in the writing of a paper entitled "Medical Participation in Public Health Work." In it, my collaborators and I started out by saying that some of the activities now included in health department programs can be transferred gradually to the general practitioners of medicine. That paper helped to establish the fact that curative medicine and preventive medicine (or, if you wish, the medical phases of public health) are indivisible.

I honestly believe that the cornerstone of modern medicine and progressive preventive medicine was laid in my home community back in 1928 by Drs. L. O. Geib and Henry Vaughan. Until that time, there appeared to be a breach between the private practice of medicine and the programs in public health. The private practitioner took care of the aches and pains of his patients, and the public health worker took care of their public health problems—be they the prevention of specific infections or the elimination of environmental hazards. In other words, the practicing physician took care of aches and pains, and was a specialist in that particular area. He had no interest in what then was called preventive medicine. The public health worker, on the other hand, be he a physician or not, was a specialist in disease, filth and privies.

RESULTS HAD BEEN LESS THAN SATISFACTORY

Fortunately, some of the farsighted men in public health like Dr. Geib and Dr. Vaughan began to realize that though we had been working on the problems in preventive medicine for several decades, we had not quite accomplished as much as we should have. Oh yes, we had made great strides in the prevention of diseases. We had cut down the incidences of smallpox, diphtheria and typhoid fever—the first two through the immunization practices which were available to us, and the third through water purification and through immunization. Yet, in 1928 we still had high morbidity and mortality rates for smallpox, diphtheria and typhoid fever in our area. For example, though smallpox vaccine had been available to us for many years, nevertheless in 1924 we had

1,610 cases of smallpox in our community, with 163 deaths. Now let's take diphtheria for the year 1921. After toxin anti-toxin had been available to us for quite a few years, we still had 4,689 cases of diphtheria, with 334 deaths.

So let's just narrow our discussion of the prevention of disease to these two rather important contagions that had been problems to us over a period of several decades. One can't regard 4,500 cases of diphtheria and 1,600 cases of smallpox in a single year as constituting a record to be proud of. What did we do about controlling those diseases?

Of course, control back in the mid-twenties and early thirties was considered the responsibility of the people in public health. There was a narrow line of demarkation between what the private practitioner did and what the public health worker did. The doctor took care of aches and pains, the sniffles and headaches, the gall bladder, the appendix, the bad heart and the diabetes, and the public health department assumed virtually the sole responsibility for prevention of disease. Well, this did not sound logical to Geib and Vaughan because they were convinced that there was no difference between curative and preventive medicine, and that the doctor who dispensed ameliorants could and should—actually, must—dispense those products that prevent disease, if we were ever going to get our population and the practicing physicians' patients properly protected against these preventable diseases.

Now no one should get the idea that this renaissance in medicine and public health was an easy task. Why wasn't it easy? Well, that is actually rather simple. The doctor and the public health worker had each stuck pretty much to his own area of responsibility. The doctor asked, "What do I care about smallpox vaccination or protection against diphtheria or typhoid? The responsibility for that sort of work belongs to the public health department, and if it does not do its job, I am available and I will take care of the sick, the ailing and the infirm."

A RENAISSANCE IN CURATIVE AND PREVENTIVE MEDICINE

Geib and Vaughan were convinced that every doctor should be a deputy health officer, and that

Dr. Molner is commissioner of health for the City of Detroit. He read this paper at the Annual Meeting of the Iowa Academy of General Practice, in Des Moines on September 22, 1958.

every doctor's office should be a health center.

They started out preaching this gospel, and believe it or not, they ran into a stone wall. The public couldn't quite understand why all of a sudden people were being asked to go to their family physician for protective agents against preventable diseases, when for years they had gone to their health departments and school clinics for those materials. So Geib and Vaughan—one a general practitioner of medicine and the other a health officer—talked things over with their associates and concluded that they must start to educate both the doctors and the general public. Furthermore, they decided that the two educational programs had to be conducted concurrently. Dr. Vaughan, the able health commissioner of Detroit, mapped out a division of labor: "I'll take on the newspapers, the radio stations and the community organizations, and you, 'L. O.,' take on the medical profession, and let's go to work."

I was a youngster at that time, but I shall never forget it as long as I live. You never saw so many speeches made as were given during that transition period. Dr. Vaughan and his associates addressed parent-teacher organizations, noon study groups and other clubs, and secured radio and newspaper publicity, all in order to tell people that there is no better way of getting protection against preventable diseases than to go to their family doctor and have him administer these preventive agents.

Simultaneously, a series of conferences with physicians took place at the Health Department, and the main theme of them was "You boys are missing a beat." The doctors were told that as long as they were taking care of children's diarrhea, ministering to their aches and pains, and adjusting their diets, they might just as well vaccinate them against smallpox and give them toxin anti-toxin.

As I said before, these programs were undertaken concurrently, for it would have been unfortunate to have families learn of these new ideas before the doctors did. Under such circumstances, doctors might have told them, "I don't know what you are talking about."

Months and even years after this pioneering work, Drs. Geib and Vaughan found that there was a sizable number of doctors who, as specialists, were uninterested in doing preventive medicine. In consequence, they developed a list of so-called "participating physicians" who had indicated their willingness to have persons referred to them for the particular protective measures that were available to us at that time. Then, when our public health nurses made their rounds of the families and found that Mrs. Jones' doctor was not on the participating list, Mrs. Jones would be referred to Dr. Smith, who was, and Dr. Smith gave these shots to the Jones children to protect them against these communicable dis-

eases. As a matter of fact, we developed a card which the doctors displayed in their offices which said in effect, "I am cooperating with the Detroit Department of Health, and I will give shots to prevent diphtheria, smallpox, etc. Please ask me about it." The card was not unlike that which the AMA provided to doctors a year or so ago expressing the physician's willingness to discuss fees. The display of our plaque became a matter of good public relations, and it caught on very well.

SUBSIDIZATION OF INOCULATION PROGRAMS

Drs. Geib and Vaughan were not out of the woods when the depression arrived in 1929. So Dr. Vaughan, the ever astute and clear-thinking health officer, went to the Common Council of the City of Detroit and said, "Now look, fellows, we can save a lot of lives and we can save a lot of hospitalization if we protect people against preventable diseases. Many of these people today cannot afford to go to their family physicians. We have worked out a program that is going to cost us some money, but we are going to save much more than we spend. Let's pay these doctors a nominal sum for every shot that they give to every child for the prevention of these diseases." With its usual enthusiasm about public health, the legislative body of Detroit fell right in line with Vaughan's suggestion, and we started subsidizing the immunization of children. This subsidy cost us a quarter of a million a year at a time when a dollar was worth a dollar, rather than just 50 cents. But the protection level of the community rose by leaps and bounds, and history records the success of medical participation in public health. In Detroit, the incidence of smallpox and diphtheria dropped almost to the vanishing point. We haven't had a single case of smallpox in Detroit in some 15 years, and the incidence of diphtheria is negligible there today.

DOCTORS HAVE FURTHER OPPORTUNITIES IN PUBLIC HEALTH

In 1936, when I was at Johns Hopkins University, one of my professors and an outstanding man in public health said to me, "Jo, you are a good student of public health. What are you going to do when you get through at Hopkins?" I replied, "I'm going back to the Detroit Department of Health." From that doctor's subsequent remarks, I gathered that, although he admired the work which the Detroit Department had done, he scarcely approved of its practice of farming out its public health responsibilities to private practitioners. Here was a man outstanding in public health work, yet of the belief that it is the inalienable duty of the public health man to line up youngsters like animals, to pull out his needles and syringes, and to give them shots, regardless of whether their mothers and fathers or the chil-

dren themselves know what those shots were intended to do. Then, he evidently believed, at the end of the assembly line he should arrange for each child to receive an ice cream cone or an all-day sucker for being such a good patient.

Drs. Geib and Vaughan held the contrasting idea that there is no difference between curative medicine and preventive medicine, and that both of these services to the community can be dispensed from the same office—the office of the private practitioner of medicine.

Today, there is hardly a place in our nation where the doctor in private practice is not practicing preventive medicine. More and more, as the years roll by, the young doctor is trained in the technics of preventive medicine, and more and more, the health department is becoming a facility for public health education.

The public health department is in a particularly good position to carry on educational campaigns. It sends out letters to the mothers of newborn infants, together with transcripts of birth certificates. Those letters butter up the new parents and outline the preventive measures that are available for the protection of their infants, explaining the significance of each of them. When, as they have been advised to do, the mother and father take their child to their family doctor, they ask for those services. If, perchance, they have forgotten to do so, or if the department's letter hasn't impressed them, the good doctor suggests that along with everything else that he does for the child it is extremely imperative that he protect him against communicable diseases.

Up to now we, have considered only immunization, but there are other topics that deserve attention. First, there are school health examinations. Who is better equipped to do a good health examination than the family physician, who knows everything about the child and for whom the examination becomes a rather easy task? He fills out the school health examination form and sends it to the health department or to the school that the child attends. The public health workers, in turn, see to it that no child misses out on a periodic check-up, and if necessary, they hunt down the leftovers and do their examinations themselves. But public health workers are no longer responsible for providing preventive medicine to 100 per cent of the public.

Then, of course, comes the public health workers' big job—follow-up of individuals with correctable defects, but in that area too, they welcome the help of private practitioners.

Now, let's consider control of foodhandlers. I doubt very much that anyone would take exception to the principle that all foodhandlers should be examined and should have chest x-rays. If some of them have histories of gastroenteric disease, they ought to have stool examinations. If there is any indication that one of them has ve-

neral disease, a smear and a blood test should be performed.

PUBLIC HEALTH IS A RESPECTED MEDICAL SPECIALTY

Up to now, we have talked about the role of the practicing physician in public health. But the public health physician also has an important role. Up until a few years ago, about the only people who went into public health were the so-called misfits. If they did not get along well in the practice of medicine because of lack of knowledge or because of a personality defect, they drifted into public health or into some other phase of medicine that did not involve patient-physician relationships. Fortunately, the picture has changed, and now there are many physicians who have been career public-health men from the start. They chose public health as their specialty, just as other young physicians chose internal medicine, surgery or ophthalmology. These men are just as well qualified in their specialty as the others are in theirs.

Times have changed. There was a time when a doctor in public health wasn't too well accepted in his medical society. As a matter of fact—though I hate to remember this—right in my own community and shortly after my entry into the field of public health, one of our narrow-minded associates in the practice of medicine proposed to the legislative body of our county society that all salaried physicians be made ineligible for membership. He made that proposal at a time when I was prepared to accept it very graciously, for my income was not too good, and the savings that could accrue from my being deprived of membership would have been more than welcome to my bank account. Fortunately, however, his more clear-thinking associates voted down his proposal so overwhelmingly that the repercussions could be felt a block away, and of course I continued to pay my dues.

Times have changed. Now, within the structure of our medical society, we have a Preventive Medical Committee, and the Health Department is well represented on it. We also have a Maternal and Child Health Committee on which the Health Department is represented. We have a Civil Defense Committee on which the Health Department is again well represented. I could name even others. Then, to make the cheese more binding, in many instances throughout the country, the health officer is an officer of the medical society. In our own community for I don't know how many years, I have been a member of the house of delegates of my local society and of the state society, and I have represented my state society in the House of Delegates of the AMA.

SUMMARY

In this long dissertation, what I have told you can be summarized in but a few words: There is no justifiable dividing line between curative

medicine and preventive medicine. Public health is everybody's business, and through team work hundreds of thousands of communicable disease cases and deaths have been brought down almost to nothing, and we have come to the threshold of control in all of these diseases.

Who do you think did it?—The practicing physician!

REFERENCES

1. Geib, L. O., and Vaughan, H. F.: Physician as health worker. *J.A.M.A.*, **97**:366-369, (Aug. 8) 1931.
2. Vaughan, H. F.: Medical participation in public health work. *Am. J. Pub. Health*, **22**:933-939, (Sept.) 1932.

Annual Meeting, Sioux Valley Medical Association

The scientific program of the Sioux Medical Association, which will be presented at the Sheraton-Martin Hotel, in Sioux City, on Tuesday, Wednesday and Thursday, February 24-26, is to be sponsored by the University of South Dakota School of Medicine and has been accredited by the American Academy of General Practice for 18 hours of Category I credit.

Tuesday, February 24
St. Vincent's Hospital

- 9:30 a.m. **PATHOLOGY**
"Protein Bound Iodine"—Dr. J. M. Brown
- 10:00 **UROLOGY**
"Ureteral Tumor" (Case Report)—Dr. L. E. Pierson
"Testicular Tumor" (Case Report)—Dr. E. M. Honke
"Congenital Anomalies of the Genitalia"—Dr. J. A. McFarlane
- 10:30 **OBSTETRICS-GYNECOLOGY**
"Emotional Aspects of Pregnancy"—Dr. G. W. Rowney
- 11:00 **ORTHOPEDICS**
"Elbow and Forearm Fractures of a Child"—Dr. A. Blenderman
- 11:30 **PEDIATRICS**
"Erythroblastosis—Still a Problem"—Dr. O. A. Stauch
- 1:00 p.m. **GENERAL PRACTICE**
"Inversion of Uterus Immediately Following Delivery"—Dr. R. C. Mugan
- 1:30 **INTERNAL MEDICINE**
"Chronic Pyelonephritis"—Dr. G. C. Spellman
- 2:00 **SURGERY**
"Hiatal Hernia"—Dr. C. L. Beye
"Cancer of Thyroid"—Dr. C. A. Jacobs
"Upper GI Tract"—Dr. A. J. Callaghan
- 2:30 **RADIOLOGY**
"Newer Diagnostic Uses of Isotopes"—Dr. W. S. Thoman
- 3:00 **E.E.N.T.**
"Middle Ear Infection—Adequate Care and Treatment"—Dr. M. J. Ryan
- 7:30 **SMOKER** featuring Dr. L. A. Coffin, Farmington, Iowa, AMA General Practitioner of the Year

Wednesday, February 25
Sheraton-Martin Hotel

- 8:50 a.m. **MOVIE** "Traumatic Hernia of the Diaphragm"
- 9:30 "Life Saving Measures in Multiple Injuries"—Dr. Oscar P. Hampton, Jr., assistant professor of clinical orthopedic surgery, Washington University, St. Louis
- 10:30 "Neurological Localization and Diagnosis of Cerebral Vascular Accidents"—Dr. Harold A. Ladwig, assistant professor of neurology and psychiatry, Creighton University
- 11:15 "Important Bacteriological Problems in Medicine Today"—C. D. Cox, Ph.D., professor of bacteriology at the University of South Dakota School of Medicine
- 12:00 m. **LUNCHEON MEETING**
- 1:00 **MOVIE** "Abnormalities of the Extrahepatic Biliary System"
- 1:30 To be announced
- 2:15 "Treatment of Fractures and Fracture Dislocations About the Ankle"—Dr. Hampton
- 3:15 "Treatment and Rehabilitation of Cerebral Vascular Diseases"—Dr. Ladwig
- 5:30 **SOCIAL HOUR, DINNER AND DANCE**

Thursday, February 26
Sheraton-Martin Hotel

- 9:00 a.m. **MOVIE** "Splenectomy in Treatment of Hypersplenism"
- 9:30 "Infertility—a Family Unit Problem"—Dr. W. H. Masters, associate professor of obstetrics and gynecology at Washington University, St. Louis
- 10:30 "The Electrocardiogram in Myocardial Infarction"—Dr. L. E. January, professor of internal medicine, S.U.I.
- 11:15 "Management of Nephritis and Pyelonephritis in Children"—Dr. Wallace W. McCrory, professor and head of pediatrics, S.U.I.
- 12:00 m. **LUNCHEON MEETING**
- 1:00 p.m. **MOVIE** "Action of the Heart Valves"
- 1:30 "Habitual Abortion"—Dr. Masters
- 2:15 "Steroid Therapy in Renal Disease"—Dr. McCrory
- 3:15 "Rehabilitation of Farmers With Heart Disease"—Dr. January



Scientific Articles

The Treatment of Congestive Heart Failure

FRANCIS D. MURPHY, M.D.

MILWAUKEE, WISCONSIN

CONGESTIVE HEART failure is one of the commonest, and at the same time one of the most complex problems in the practice of medicine. Its treatment probably requires more skill and experience than any other disorder the physician is called upon to undertake. It is especially complicated because so many extra-cardiac conditions may alter the course of congestive failure, such as disturbances in electrolyte balance, hormonal disorders and the psychological aspects that involve the patient. Despite many years of experimental pathologic studies and extensive clinical investigation, the exact mechanism of congestive heart failure is not thoroughly understood.

One may begin a discussion of this subject by asking, "What is congestive heart failure?" The answer is not easily given, but for practical purposes we can say that it is the condition which exists when the heart cannot pump the amount of blood needed by the body. As a rule, the results are a fall in the cardiac output of blood, and stasis of various tissues of the body. The venous blood pressure rises, and the renal blood flow diminishes.

For many years there have been two different theories regarding the mechanism of heart failure. The older one implied that when a chamber of the heart fails to do its duty, there is a congestion or back pressure behind the failing chamber. The other, known as the forward failure theory, suggests that heart failure is due to an insufficient output of blood to the tissues, and this lack of blood—particularly to the kidney—results in edema. In the opinion of most clinicians, it is hard to conceive of a forward failure without some backward failure, and it is difficult to see how a backward failure could escape evidence of forward failure. However, it is useless to pursue this complicated

problem now, for the foremost authorities hold divergent opinions regarding it.

From the practical standpoint, dyspnea, edema and muscular weakness are the classic features of congestive heart failure. Dyspnea occurs as the result of congestion in the lungs due to the failing heart. Edema is due to the effect of heart failure upon the kidney itself. Through a complicated mechanism, edema affects the kidney through a failure of glomerular filtration and renal blood flow, so that salt and water are retained. The capillary and venous blood pressures rise, there are excesses of salt and water, and the serum osmotic pressure diminishes. What part venous pressure plays in the production of cardiac edema has been a controversial point. Stead and his co-workers believe that the increase in venous pressure is secondary to the rising water and salt, rather than the cause of it.

Along with these hemodynamic problems is the question of the effect of heart failure on the brain and the hormones of the body, along with the production of an antidiuretic hormone. Little is known regarding ADH, although Johnson and Conn believe it is possible that a reflex stimulation of increased aldosterone production acts as an antidiuretic substance, and that its action persists sometimes even after the original defect has been corrected or has disappeared. Others, although they do not imply that aldosterone is the sole cause of sodium retention, believe edema is associated with high aldosterone levels and reduced sodium in urine.

Muscular weakness or fatigue is due to the failure of proper blood supply to the muscle.

CLASSIFICATION OF CONGESTIVE HEART FAILURE

From the clinical standpoint, heart failure may take on different forms according to the chamber of the heart predominantly involved. It may be classed as left ventricular failure or right ventric-

Dr. Murphy is a professor of medicine at the Marquette University School of Medicine and director emeritus of medicine at the Milwaukee County Hospital. He read this paper at the annual meeting of the Iowa Academy of General Practice in Des Moines in September, 1958.

ular failure. Some physicians believe it is unnecessary to make this distinction, for they believe both chambers fail simultaneously. This is not always true, however, especially in the earlier stages of failure when the symptoms of heart exhaustion may indicate a right or a left chamber deficiency. If heart failure persists, both sides eventually participate in the failure.

It is of more than academic importance that these two kinds of congestive failure be given separate attention, for it is well known that left ventricular failure is commoner in older people, and that right ventricular failure is seen more often in young people. Furthermore, when the left ventricle fails, the chances of completely controlling the failure for any length of time are considerably less than when right ventricular failure predominates. Not only is the age of the patient a modifying factor, but the causes of these conditions also enter into the consideration.

Left ventricular failure, because of the elevation of the pressure in the lungs, has been considered the commonest cause of right-sided insufficiency. As incompetency of the left side of the heart occurs more commonly than incompetency of the right side, left ventricular failure will be considered first.

Left Ventricular Failure. There are three outstanding causes of this condition: (1) hypertension, (2) aortic regurgitation or stenosis, and (3) coronary disease involving the left side of the heart.

There are three prominent symptoms which are significant in the early diagnosis of left ventricular failure: (1) dyspnea of the nocturnal, paroxysmal variety; (2) coughing, occurring especially in the morning hours and caused by a mild congestion in the lungs; (3) distressful sensations in the area of the sternum, and at times even genuine angina pectoris. These early features of left ventricular failure may be transitory, lasting a few days or a week, and then disappearing for a while and returning again within weeks or months. There may be times when a remission of these symptoms will take place, alternating with acute crises of congestive failure. However, when ventricular failure sets in, complete recovery seldom if ever occurs. The reason for this is manifold. The patient usually is in advanced years when the degenerative changes begin, and they are apt to be progressive in nature. Furthermore, for reasons as yet unknown, when the massive left-ventricle muscle has had its reserve once broken, it can be restored to normal only with greatest difficulty. In right ventricular failure, remissions may occur, extending over long periods of time after short periods of failure, and sometimes complete remission occurs. It is therefore evident that when left ventricular failure becomes established, the outlook for the patient is poor, and in a short time the right chamber will be strained too, and will finally fail. It is obvious, then, that proper management should

be established as early as possible, and that causes such as hypertension should be treated at once.

Right Ventricular Failure. There are also three salient causes of right ventricular failure: (1) mitral stenosis; (2) pulmonary fibrosis or emphysema; (3) coronary disease involving this ventricle predominantly.

Right ventricular failure, when it appears before left failure, may be of short duration, and after several episodes may completely disappear and never return again. It is a disorder more of youth than of old age. The characteristics of right ventricular failure are: (1) edema of the ankles, spreading over the lower extremities; (2) ascites, painful congestion and enlargement of the liver; (3) pleural effusion—pericardial effusion; (4) turgescence of the veins of the neck; (5) cyanosis; (6) dyspnea. The dyspnea is not as disabling and distressing as the dyspnea of left ventricular failure, where the pulmonary edema is an early and significant condition.

Naturally, if right failure follows left failure, the result is complete congestive failure, and the prognosis changes. Frequently, right ventricular failure is associated with mitral stenosis after excessive exercise, and sometimes it occurs during parturition. Unlike left ventricular failure, right failure may occur to a patient again and again, but with careful management, years may elapse before the condition becomes fatal.

TREATMENT

The general principles in the treatment of congestive heart failure are firmly established. They are: (1) rest; (2) digitalis; (3) diuretics. Rest is considered the most important, and although easy to prescribe, it is difficult to carry out. Complete rest usually is not indicated in the early stages of congestive failure. Bed rest is seldom necessary and may often be more detrimental than beneficial. Convalescence in an easy chair for anywhere from two or three weeks to a few months is advisable, depending on the individual case.

In recommending rest, the physician must suit his instructions not only to his knowledge of the disease itself but also to the extent of the heart failure and the social and economic situation of the patient. A winter in Florida or in some other salubrious climate, with complete resignation from the duties of life, may be appropriate for some patients, but for a day laborer it would be an excessively expensive form of therapy. Conditions at home can be modified in such a way that the patient will obtain the required rest. Levine is an exponent of the theory that the dynamics of the circulation when the patient assumes a recumbent position result in an increase in blood volume and aggravate pulmonary congestion. Elevation of the head of the bed is recommended, as well as the armchair treatment which permits the patient to be up and about. The chair treatment, although not particularly new, is an effective therapeutic meth-

od in treating many patients with congestive heart failure.

Oxygen is given routinely, especially if cyanosis and dyspnea persist. If it is possible to avoid morphine and the other opium derivatives, it is wise to do so, because of their anti-diuretic effect on the kidney. Often simpler measures, such as phenobarbital, bromides and other sedatives, will produce the desired result.

The second outstanding therapeutic aid is digitalis. Many clinicians consider it the most important medication used in the field of medicine, but frequently it is the most poorly administered.

Though it is necessary to individualize the dosage and the kind of digitalis used, there are certain rules that must prevail. The whole leaf of digitalis has become more popular than it was a few years ago. Such authorities as White and Levine recommend whole leaf. It is given in doses of 1.5 grain capsules or tablets, two or three times a day until satisfactory therapeutic results are obtained. Within recent years, the purified glucosides of digitalis have been popular, such as Digitoxin, 0.1 mg. two or three times a day until the therapeutic dose is given, and then 0.1 mg. once a day. Digoxin, which is derived from the digitalis lanata leaf rather than from the digitalis purpurea leaf, is used extensively in doses of .25 mg. two or three times a day, and then reduced to .25 mg. once or twice daily to keep up digitalization. For emergency use, when a patient is too sick to swallow medicine or is vomiting, it is well to resort to one of the intravenous or intramuscular preparations, for example Cedilanid, which comes in ampules of .45 mg. and may be injected every six hours for three or four days in order to control failure. Although there are other preparations which can be used satisfactorily in this manner, it must be emphasized that for oral medication the leaf is a safe and simple method of digitalization and usually accomplishes the purpose as well or better than any of the derivatives.

Digitalis is an old drug which has been commonly used even though its action is not thoroughly understood even today. From Cushny we know that it is a pharmacologically active drug and that it (1) increases the strength of contraction of the heart muscle, (2) increases the irritability of the heart muscle, (3) slows the heart action, and (4) as a sum total of these effects increases cardiac output in a heart that is diseased. The action of digitalis, or for that matter of any drug which affects the heart muscle, is not clearly understood, and neither is the exact nature of cardiac dilatation or hypertrophy, for the physical chemistry of the cardiac muscle and its contractions is unknown.

In congestive heart failure, the increase of extracellular fluid (edema) is the result of retention of salt and water by the kidney. It is common practice now to limit the intake of sodium chloride to 2 Gm. per day or less in the diet. This type of diet is rather simple, but if any difficulty arises, one can resort to the old routine, the Karell diet, which

consisted of 200 cc. of milk four times a day, with as much water as required.

The general intake of food in patients with heart failure should be cut down. The reduction of weight is a paramount factor in management, since it is helpful not only in reducing edema but also in relieving the extra load upon the heart itself. The dietary rule in the treatment of the cardiac is to keep the weight 10 lbs. under the average, rather than over the average. The protein and fat content of the diet may be regulated according to individual needs and desires, within the limitations imposed by the heart failure itself.

Lowering of an elevated blood cholesterol is advisable, particularly if the cause of the failure is coronary disease. Although many aspects of the relationship between cholesterol levels and heart disease need clarification, fatty infiltration of the myocardium seen in obesity may contribute to impairment of the heart function. Unquestionably, thrombosis and infarction occur more readily in arteries that are severely sclerosed. An individual with a familial predisposition to cardiovascular disease should eat less fat, and one who is obese and has a family history of early death from such a disease certainly should restrict the fat content of his diet.

The successful use of diuretics within recent years has been one of the great advances in the treatment of heart failure. In my own early days, diuretics were not popular and were not very effective either. The diuretics used today are the mercurial preparations such as Mercurhydrin. These are administered intramuscularly, for they are too painful when given subcutaneously and too dangerous when given intravenously. The results achieved by the mercurial diuretics are due to the fact that the mercury interferes in some way with the reabsorption of salt in the distal tubules of the kidney. Sometimes ammonium chloride in doses of 2 Gm. three or four times a day is given for a few days prior to the administration of the mercurial diuretic. Unless this is done, there may be no response to the injected mercury, since often the chloride of the serum falls to a very low level, and unless there is sufficient chloride present to remove the sodium, there will be no diuresis. This may also result from a low serum sodium. Unfortunately, ammonium chloride occasionally causes nausea and other unpleasant reactions, and in that case it should be given in smaller doses and over a longer period of time. There are some dangers, of course, in using any of these diuretics.

The latest adjunct to the therapeutic armamentarium in congestive heart failure is chlorothiazide (Diuril), a non-mercurial diuretic which is being widely used and with gratifying results in the treatment of patients with edema of nephrosis as well as congestive heart failure. This preparation is given orally in doses of 125-500 mg. two or three times daily as needed. Its action is poorly understood, but it induces the excretion of sodium

and chloride together, thus undoubtedly preventing the acidosis sometimes produced by other diuretics. Although chlorothiazide has not been on the market long enough to warrant anyone's drawing far-reaching conclusions about it, many physicians consider it a safe and valuable diuretic in the treatment of edema of congestive heart failure as well as essential hypertension. I have found intermittent therapy, such as three days on and three days off, a useful program.

When using the mercurials or the non-mercurials, one should as a rule prescribe a diet of the low-salt type. Caution should be exercised, however, for in using these powerful diuretics, one should keep a close watch upon the serum electrolytes, particularly the sodium and potassium. Although the danger of the low-salt syndrome is slight, it nevertheless does occur and should be given careful attention. If the patient develops an abnormally low serum sodium and chloride, he becomes unresponsive to the diuretic, and edema may increase despite its use. The patient may also become extremely weak and delirious, and may suffer from pain in the legs. These symptoms can be relieved through the administration of sodium chloride (300 cc. of 3 per cent saline solution) given intravenously. This is rarely necessary, however, and the need for it usually occurs only when the diuretics have been overused.

Before concluding, I should like again to emphasize the importance of the attitude the physician adopts in treating cardiac patients. It should be one that inspires confidence, that consoles the patient

and that encourages him to overcome the awesome fear that is always a part of these disorders. This attitude is more than just a bedside manner. The role of the nervous system in heart disease is poorly understood, but the attending physician should spend adequate time in allaying these psychic manifestations. Though even the research workers freely admit they do not understand many of these mechanisms, any good physician can and should give his patients the requisite reassurance.

CONCLUSIONS

There are several special considerations in the management of the patient with congestive heart failure: (1) If hypertension is present, it must be reduced, and for this purpose a ganglion blocker may be necessary. For example, hexamethonium may be given in a cardiac emergency, 25 mg. in 10 cc. of fluid, intravenously and slowly, two or three times a day, in order to take the load of hypertension off the heart. (2) The accumulation of fluid in the thorax may hamper cardiac action and hinder the success of other measures used in treatment. Therefore, the mechanical removal of fluid from the chest may be necessary. (3) Often the patient who is resistant to treatment has some infection that must be found and eradicated before treatment will be successful. (4) Whenever a patient has heart failure, and especially if auricular fibrillation is present and he is resistant to treatment, a search for a nodular goiter should be made. The "goiter heart" is overlooked more frequently than many physicians realize.

One of Alaska's Senators Is a Doctor of Medicine

Ernest Gruening, M.D., is the first doctor of medicine to become a member of the United States Senate since Royal S. Copeland, M.D., of New York. Most people who have acquainted themselves with Senator Gruening's background think of him as a newspaperman and former governor of the Alaska Territory. Mr. Gerald G. Gross has added another facet to the man's personality in the January 5 issue of *WASHINGTON REPORT ON THE MEDICAL SCIENCES*:

"Ernest Gruening was the fourth child and eldest son of Dr. Emil Gruening, who in 1903 headed the American Otological Society and, seven years later, the American Ophthalmological Society.

"In his fourth year of medical school, young Gruening passed an examination for appointment to the surgical service of Boston City Hospital, effective in February. Since a month was to elapse between the close of classroom work and his reporting to the hospital staff, he decided to apply for a cub reporter's job on the *BOSTON AMERICAN* to pass the time. That did it. Within two weeks his mind was made up. Although he subsequently returned to Harvard to fulfill requirements for his M.D. (he got it a year late, with the class of 1912),

Dr. Gruening was embarked on a career in public affairs. In another year or so, he was writing editorials on the *BOSTON HERALD*, crusading against quacks and vendors of worthless drugs.

"Dr. Gruening came to Washington early in the Roosevelt Administration, serving six years in the old territories and insular possessions unit of the Interior Department. In 1939, he was named Governor of Alaska and held that post until Eisenhower succeeded Truman in the White House. A genial, humble septuagenarian of hardy stock, the new senator regards himself neither as a conservative nor as a liberal. Dubious of the wisdom of this country's spending billions for foreign assistance, he is a stalwart believer in *technical* aid to friendly lands. He will be an enthusiastic cosponsor of the Hill-Humphrey Bill for an international medical research institute.

"Though he never has practiced and holds no license, in the 1940's while governor of Alaska, Dr. Gruening succeeded in getting federal funds to fight tuberculosis among the natives and was responsible for the creation of the territorial post of commissioner of health. As a baby senator from a baby state, he'll have an abiding interest in health legislation."

Adrenalectomy for Disseminated Mammary Cancer

A Pilot Study of Sixteen Patients

ROBERT C. HICKEY, M.D.

IOWA CITY

MORE EFFECTIVE palliative means are constantly being sought for the treatment of patients incurably ill with neoplastic diseases. Cancer of the breast is one of the most common malignant diseases of women. By its nature, its clinical and biological sequence, many women fall victim to a long-lasting terminal illness which is painful, physically handicapping and all too often disastrous expensive. Thus, efforts toward palliation should be constantly pressed.

The first rational palliative therapy for disseminated breast cancer was introduced in 1896. Beatson¹ reasoned that a degeneration of epithelial (cancer) cells might follow removal of the ovaries, and accordingly he carried out oophorectomy upon three women with disseminated breast cancer, two of whom were premenopausal. Clinical improvements were noted in the premenopausal patients, and other physicians' endorsements of oophorectomy followed. But apparently the operation failed to gain wide approval, and it was abandoned for many years.

Castration as a palliative therapy was revived by Farrow and Adair² in 1942 in a male patient with mammary cancer. Since then, oophorectomy has had extensive clinical trial. The procedure is effective most frequently in premenopausal women, and it is occasionally beneficial at the time of menopause, but it is rarely effective in the postmenopausal years. This overlapping probably indicates that the climacteric is a period of gradual hormonal transition. Estimates of the effectiveness of this therapy vary widely, but beneficial results seem usually to be achieved in about 20 to 30 per cent of patients.

The rationale for such therapy is based on hormonal ablation. That is, with the removal of the ovaries, a source of endogenous estrogen is withdrawn. It has been postulated that there are estrogen-dependent tumors which undergo some regression when deprived of estrogen. It might be postulated also that the degree of estrogen dependency varies from patient to patient. It must be postulated further, especially as more and more extensive endocrine ablations are included, that the metabolic deviations may be more significant

than an altered estrogen environment *per se* for the cancer.

Significant amounts of estrogens have been demonstrated by West *et al.*³ in the urine of oophorectomized patients with metastatic breast cancer. Further, the estrogen excretion was increased by adrenal stimulation of the castrate patients by exogenous adrenocorticotrophic hormone. There is indirect evidence to support the hypotheses (1) that some urinary estrogens are secreted directly by the adrenal cortex, or (2) that they represent metabolic products of some other androgenic adrenal precursor. After adrenalectomy and oophorectomy, West and his associates were unable to demonstrate urinary estrogens in two patients tested. Thus, those experiments give further support to the idea that adrenalectomy is a means of reducing endogenous estrogens that might potentially enhance mammary cancer growth. With cortisone for the maintenance of life, adrenalectomy in man is a feasible operation, and has been for the past 10 years.

It has been extremely difficult for us to judge the palliative effectiveness of adrenalectomy for disseminated mammary carcinoma from published reports. Of 100 patients, Huggins⁴ reported a remission rate of 40 per cent. Taylor and his associates,⁵ at the University of Illinois, have reported a remission rate of about 25 per cent. The collection of a composite group of patients under the auspices of the American College of Surgeons is underway, with Dr. Ian Macdonald as the committee chairman. Such a review, with large numbers of patients, may provide much information on the utility of adrenalectomy as a palliative procedure. The State University of Iowa patients are being included in this collective survey.

OBSERVATIONS

As a pilot project at University Hospitals, we have reviewed the effects of adrenalectomy on 16 patients with disseminated mammary cancer in order to assess this procedure critically. The observation period closed in September, 1958. Some observations have covered more than three years, and no patient has been followed less than six months. As guides for the future, some notions regarding the usefulness of this operation may be gained from this group of patients.

Dr. Hickey is a professor of surgery and the assistant dean for research at the S.U.I. College of Medicine.

The difficulty in appraisal rests in part with the criteria associated with the term *palliation*. An improved sense of well being and the patient's in-

creased ability to be up and about may seem to constitute, and are termed, a satisfactory remission, but there are groups of investigators who in-

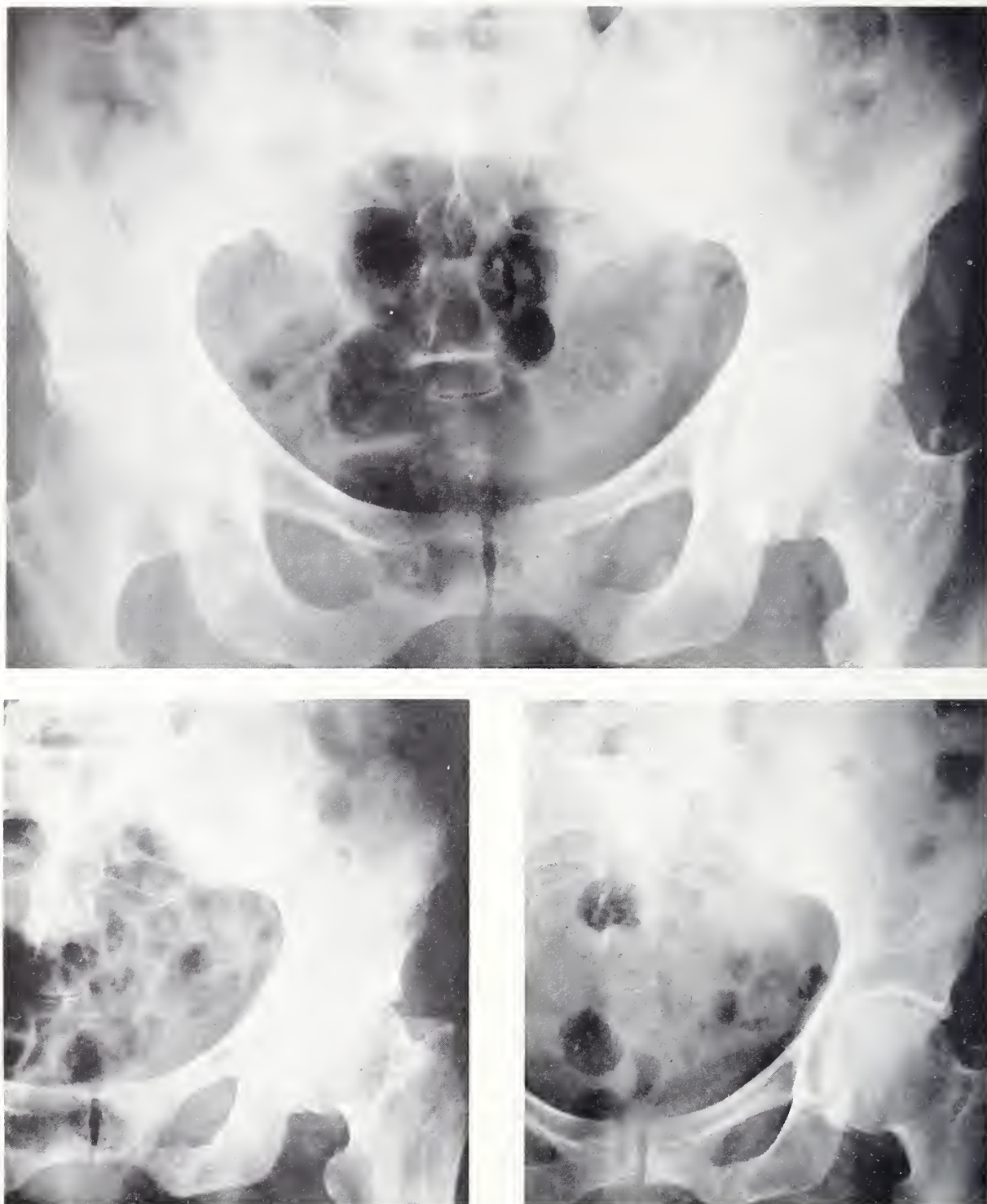


Figure 1. A 69-year-old with mammary carcinoma metastasis to the left pubic bone. A. Three months prior to adrenalectomy; patient failing clinically. B. One month after adrenalectomy. The osseous destruction is conspicuous. C. Healing at about two years postadrenalectomy, at nearly her peak in remission.

sist that remission must be evidenced by measurable tumor regression. Further, differences depend upon the selection of patients for adrenalectomy. More seriously ill patients will have higher operative morbidity and mortality rates. Certainly "medically or drug adrenalectomized" patients cannot be compared with patients subjected to surgical adrenalectomy, for the surgical patients must be capable of withstanding the operative procedure.

To judge a palliative procedure or therapeutic sequence accurately, it would appear reasonable to request (1) that no specific antitumor therapy immediately antedate the test therapy, (2) that subjective responses be carefully assessed in reasonably intelligent patients with minimal emotional factors, (3) that no judgment be made without a sufficient observation period (six months for adrenalectomy), and (4) that objective responses be measured in terms of tumor regression.

These standard conditions are ideal and have not been fulfilled completely. In most instances, oophorectomy was combined with adrenalectomy. In two premenopausal patients, oophorectomy essentially coincided with the adrenalectomy as a sequential part of a definitive therapeutic procedure. In postmenopausal patients (natural or induced), oophorectomy was performed also, if a transabdominal adrenalectomy was done. No judgments were drawn after less than six months' observation. The emotional behavior of one patient handicapped analysis, and this result was not classified. No known antitumor therapy was used during any observation period, although some focal roentgen therapy was given to a few osseous lesions prior to adrenalectomy. These areas were not used to measure adrenalectomy response.

Table 1 sums up the results. In the 16 patients, there were three operative deaths. One death was due to venous hemorrhage at operation. The second was probably due to ventricular fibrillation. The patient was a 60-year-old woman with known

cardiac disease, and she fell dead as she walked past the nurses' desk on her way out of the hospital after an uncomplicated course. The third of the deaths occurred to a patient who had been poorly chosen as an operative candidate. She had a stormy postoperative hypoadrenal condition, and she died suddenly on the fourth day, probably because of a pulmonary embolus. She had advanced bony metastatic disease with excessive calcium excretion and multiple pathological fractures. She had been bedfast and had had no improvement after oophorectomy. Three patients experienced no improvement and died within two months. Of two patients who had no measurable benefit, one lived eight months and the other six months after adrenalectomy.

At seven months, we have not been able to classify one result because of the patient's emotional behavior. Another patient experienced subjective improvement for 12 months, with life extended to 15 months after operation. Six patients demonstrated objective evidence of tumor regression.

All patients who demonstrated objective evidence of tumor regression benefited subjectively also. The relief of osseous pain was striking, and soft-tissue masses regressed so that palpable lumps became imperceptible and ulcers healed. One patient with lymphogenous spread of cancer in the lungs had relief from incapacitating dyspnea, and another patient had spontaneous release of a biliary obstruction due to liver hilar metastatic nodes. An example of osseous healing as demonstrated by serial radiographs is shown in Figure 1, and the healing of soft-tissue ulcer is depicted in Figure 2.

A favorable response to adrenalectomy is most gratifying when obtained, and the palliation is excellent. The longest remission in a patient still doing well has been 38 months, and the shortest period of benefit where an objective response was measured has been about six months. The durations of improvement, as of September, 1958, of the six patients with objective remissions were 38, 10 and 9 months in those living, and 6, 12 and 28 months in those who had died. When the patient relapses again, she tends to succumb rapidly.

TABLE 1
ADRENALECTOMY FOR BREAST CANCER
(Ages: 30-69; median 50 yrs.)

Surgical deaths		
Hemorrhage	1	
Ventricular fibrillation	1	
Questionable pulmonary embolism	1	
		3
Short-term survivals (up to two months)		3
Unimproved	2	
Not classified	1	
		6
Subjective improvement	1	
Objective improvement	6	
		7
		16

SURGICAL CONSIDERATIONS

There are several surgical approaches which allow extirpation of the adrenal glands. Bilateral flank incisions may be used, resecting the twelfth rib. With downward traction upon the kidney and utilizing the kidney predominantly as a landmark, one can remove the suprarenal glands in a single or staged procedure. Particular attention must be directed in such a dissection to remove the twelfth rib subperiosteally and to press the diaphragm superiorly so as not to enter the pleural cavity. Another surgical procedure can be performed with the patient prone and anteflexed. Through a hock-

ey-stick incision, a two-team approach is made simultaneously to each gland by resection of the eleventh ribs.

Another approach, through an upper transabdominal incision, carries the advantage that the surgeon may remove the ovaries and both adrenals through this single incision. For exposure and removal of the right adrenal, the liver is retracted superiorly, the second portion of the duodenum is retracted medially, and the kidney is pressed inferiorly. On the left, the area is approached initially by dividing the spleno-colic attachments. The colon is reflected medially, the stomach supero-medially, and the midportion of the body of the pancreas is retracted superiorly with the kidney being pressed inferiorly. The left adrenal lies beneath the pancreas and superomedial to the kidney. On either side and with any approach, the surgeon must have hemostasis. The adrenal veins enter directly into the inferior vena cava on the right, and on the left the main venous return is into the left renal vein. The arterial blood supply is variable, but the strongest sources are from the reasonably constant phrenic arteries. On the left, an inconstant recurrent branch from the left ovarian artery may be confusing.

The preoperative preparation of the patient centers around hormonal replacement therapy. The regimen follows one described at the University of Chicago.⁶ Oral cortisone is started 24 hours preceding the operation, as 50 mg. every six hours. In addition, 5 Gm. of sodium chloride and 2.5 mg. of desoxycorticosterone steroid is given orally. Two hours before the scheduled operation, 150 mg. of cortisone is given intramuscularly. Postoperatively, the regimen of 50 mg. of cortisone intramuscularly every 4-6 hours is continued, with supplemental sodium chloride. The cortisone dosage is dropped gradually in 4-6 days to a maintenance dose of 37.5-50 mg. of cortisone in daily divided increments, along with 3 Gm. of salt. In reducing the postoperative dosage, we use alternately an oral and an intramuscular preparation to avoid crisis. Desoxycorticosterone is used inconsistently postoperatively, or as needed. The sublingual administration of 1 mg. of desoxycorticosterone daily proved beneficial to one pa-

tient maintained on Metacorten[®] postoperatively.

The long-term management of these patients has been quite satisfactory. They are instructed to increase their cortisone intake in stressful situations. Of the two known late episodes of adrenal cortical insufficiency, one was associated with a mild illness at home in a patient who had disregarded instructions, and another was in our own hospital, months after the adrenalectomy, and was related to unsuccessful attempts at esophageal dilatation. Both patients recovered after vigorous replacement therapy.

COMPLICATIONS

Table 2 deals with the various complications. Most of these have been discussed. The early postoperative complications included an instance of venous hemorrhage with death, postoperative adrenal insufficiency with electrolyte and hypotensive disturbances in two instances, and mild congestive heart failure in another instance. The last patient had a lymphogenous pulmonary spread of cancer and developed a hypervolemia associated with the corticoid administration used to carry her through the operation. Another complication was a tension pneumothorax which developed in the operating room when a bilateral flank adrenalectomy approach was used. The pneumothorax was discovered and corrected in the operating room with no sequelae.

The late complications have included two described instances of adrenal cortical insufficiency under stressful situations. Other patient difficulties included an unexplained psychosis, and an instance

TABLE 2
ADRENALECTOMY COMPLICATIONS

Early	
Hemorrhage	1
Adrenal cortical insufficiency	2
Congestive heart failure	1
Tension pneumothorax	1
Late	
Adrenal cortical insufficiency	2
Overdosage of cortisone	1
Psychosis	1

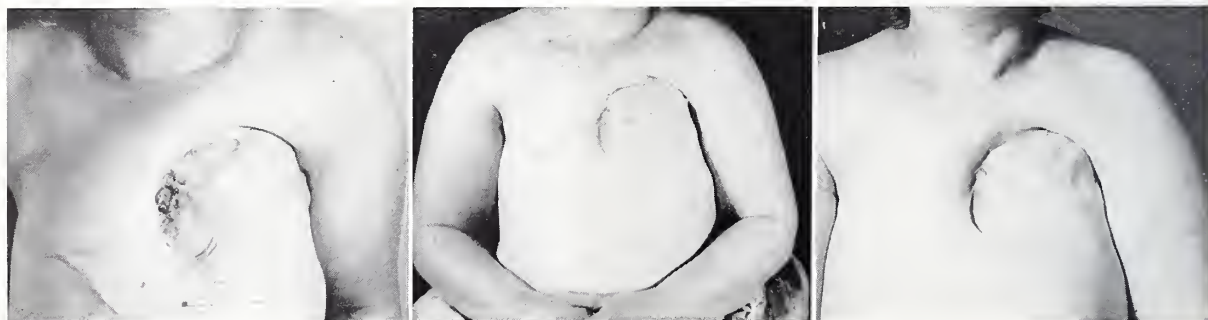


Figure 2. Chest-wall recurrence of cancer in a 44-year-old woman. A. Two months prior to adrenalectomy. B. Six months after adrenalectomy. C. Ten months after adrenalectomy. Note the renewed activity, enlargement of the left supraclavicular nodes. These responded to external x-ray therapy, and the remission has continued.

in which a patient with prolonged overdosage of cortisone had weakness that improved when the dosage had been reduced.

COMMENT

If adrenalectomy is to be worthwhile, the proper patients must be selected for operation. This has been difficult to do. A patient must not be too ill for an operative procedure, for retrospective judgment indicates that two patients who succumbed were too advanced in their illness to warrant such extensive therapy in the hope of palliation.

On the other hand, we may have erred in carrying out trials of exogenous hormonal administration in lieu of attempting early adrenalectomy in patients who were failing clinically. In general, however, it must be stressed that adrenalectomy should not be the first strong attempt at palliation. Other means should not be forgotten as one attempts to use or to judge hormonal manipulations or ablations. For example, focal x-ray might well be used advantageously for fractures or osseous destruction, and the bypass of alimentary-tract obstructions may be essential. In judging the effects of adrenalectomy, one must accord other palliative procedures their proper place and merit, and the results of these must not be confused with or mistaken for the beneficial effects of adrenalectomy. We believe we have avoided these pitfalls.

Some suggestions for selection may be gleaned from a study of our patients who have benefited objectively. A patient who is bedfast probably should not be operated upon. Age offers no exact criterion with respect to a successful result. It is suggested that patients who have responded to previous oophorectomy or the administration of male hormone are more likely to be benefited. It may be noteworthy, also, that a prolonged lapsed duration of disease, from onset of therapy until first recurrence, is favorable to the patient, though this may reflect merely a biological equilibrium between the cancer and its victim. It remains that the selection of patients for adrenalectomy is partially a trial procedure.

SUMMARY

The sufferings of a patient incurably ill with cancer are worthy of attention. Adrenalectomy, as a palliative procedure, carries considerable risk, but when a favorable response is obtained, it is well worth while for the patient with disseminated mammary cancer.

The factors favorable to a good response need more study. As experience accumulates, a better selection of patients for adrenalectomy and a reduced mortality may be expected. From the literature and our limited experience with a pilot group of patients, it appears that about 40 per cent of the patients with adrenal mammary cancer may be expected to receive a striking degree of palliation for a mean duration of 12 months or longer.

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SALK ADVISES A FOURTH SHOT OF VACCINE

Addressing a National Foundation symposium at the University of Michigan early in January, Dr. Jonas Salk conceded that an unspecified portion of the commercially manufactured vaccine bearing his name had been relatively ineffective, and theorized that cases of paralytic poliomyelitis that have occurred in persons who had received three shots can be blamed on the defective batches of vaccine.

According to a report in the January 17 issue of *TIME*,* Dr. Salk explained that this kind of trouble is unavoidable with any killed-virus preparation, but was intensified in this instance because manufacturers took special pains to render the vaccine noninfective, following the deaths that occurred early in 1955.

The idea that many people do not respond to the vaccine is wrong. On the basis of elaborate studies, Dr. Salk reported that such individuals are few. But he conceded that there were defects in the design of the vaccine. It contains three strains of polio virus for the three broad types that can independently cause disease: Mahoney for Type I; MEF-1 for Type II; and Saukett for Type III. About 80 per cent of paralytic poliomyelitis used to be caused by Type I strains, and of the balance, Type III caused slightly more than half, leaving Type II as the least dangerous. But it is against Type II that the vaccine has proved most effective. Type II has almost disappeared in the four years since the Salk vaccine was introduced. In the inoculated children whom Dr. Salk has studied, antibody levels are highest against Type II, lower against Type I and lowest against Type III.

Dr. Salk recommended a fourth, booster, shot for persons who have already had three.

Though he did not specifically propose it, doubtless he intends a drastic revision of the vaccine, probably by replacing the Mahoney and Saukett viri with ones that will be more effective against Type I and Type III strains.

Eventually, Dr. Salk predicted, paralytic poliomyelitis can be prevented with only two shots of improved vaccine, with a third shot later to give "prolonged immunity."

* *TIME*, January 19, 1959, pp. 42-45.

Problems of Anisometropia

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THIS PAPER, primarily a survey of the literature, will review the problems of anisometropia and the methods presently used in its treatment. I did the requisite investigation because I felt I needed to refresh my knowledge of the condition, and I hope my findings will be of similar value to my readers.

First to define some terms. *Anisometropia*, in contrast to *isometropia*, commonly means unequal refractive errors. The condition may be emmetropia, with one of the eyes being ametropic. The affected eye may be on the myopic or hyperopic side, or there may be varying degrees of hyperopia or myopia. In antimetropia, one eye is myopic and the other is hyperopic. Astigmatism may be a factor in any of the above, or it may occur alone. Aphakia is usually considered a special situation in the field of anisometropia.

There are thought to be three etiologic factors in anisometropia and antimetropia: first, hereditary transmission of different characteristics; second, varying developmental evolution of the refractive error in the two eyes, particularly in regard to axial myopia; and third, unocular disease or injury. The condition may be present at birth, or it may be acquired.

VISUAL ACUITY IN ANISOMETROPIA

It is interesting to compare two papers, one written by Copps¹ in 1944, and the other by Jampolsky *et al.* in 1955. Copps wrote that he had been unable to find any summary or survey in the literature, and hence in his own practice he had tried to determine the percentage of anisometropia and the visual acuity in his cases. In 1,000 refractions, he had found 44 cases of anisometropia. Twenty-four of them exhibited between one and two diopters' difference between the two eyes; 10 cases had a difference of two to three diopters; and 10 cases had a difference greater than three diopters between the two eyes. From those findings, he arrived at four conclusions. First anisometropia usually results in amblyopia in the eye with the greater refractive error, and in more or less direct proportion to the difference in refraction. Second, amblyopia is greater in the hyperopes than in the myopes. Third, in hyperopes, if there is over two diopters of difference, it is unusual to find equally good visual acuity in the two eyes. Fourth, if astigmatism is present along with either hyperopia or myopia, there is a greater probability of amblyopia. No controversy about those conclusions has appeared in print.

Eleven years later, Jampolsky and several collaborators² reported in the *AMA ARCHIVES OF OPHTHALMOLOGY* on a more thorough study. The 200 subjects whom they chose were individuals who satisfied the following requirements. (1) There must be no people over the age of 55. (2) There must be no observable pathology. (3) There must be no cases of strabismus. (4) There must be one diopter or more of anisometropia, or one diopter or more of astigmatism, in one eye. (5) The ametropia could be no greater than seven diopters in any meridian.

After placing the refractive status on an equivalent-spheres basis, the investigators noted the following points:

1. That equal corrected acuity is significantly more common in myopic than in hyperopic anisometropia

2. That unequal corrected acuities are not only significantly more common but also reach higher values in hyperopes than in myopes

3. The corrected acuity of the better, or less emmetropic, eye decreases (although not strikingly with increase in ametropia), and the decrease is slightly more rapid in hyperopia than in myopia

4. The corrected acuity of the worse eye in myopia falls with increase in ametropia, slightly more rapidly than in the better eye

5. The corrected acuity of the worse eye in hyperopia, with increase of ametropia, falls significantly more rapidly than the acuity of its better fellow, or the acuity of either the better or worse eye in myopia

6. In consequence, the average corrected acuity of the hyperopic eyes is lower than that of myopic eyes

7. Although unequal corrected acuity is associated with anisometropia, its greater incidence in hyperopia is not due to the greater frequency of anisometropia in this sample, since the occurrence of anisometropia does not differ significantly between the myopic and hyperopic groups.

It is interesting that the most commonly offered explanation for the inequality of visual acuity is that the difference of accommodation required by two eyes with unequal refractive errors leads to the amblyopia of the worse eye. However, it must be acknowledged that other factors such as aniseikonia and the prismatic effects of correcting lenses may lead to suppression or alternation, and hence affect the visual acuity.

There is another point to consider. The vision in anisometropia can be monocular or alternating; it can be simultaneous macular perception without fusion, which presumes too great a disparity in retinal images; and a fourth possibility is binocular single vision, which is commonly found

in association with a very small difference in refractive error and reasonably good visual acuity in each eye.

Several clinical points of interest arise in cases of anisometropia. Cowan³ has pointed out that in spite of the difference of refractive errors or despite unequal retinal images, vision is many times reported to be better in people with anisometropia when they use both eyes rather than either eye alone. It has also been observed that people with this condition are unaware of their situation until it is pointed out to them. Also, many people with this condition consider it a privilege to have one eye myopic and the other hyperopic, since they are thus able to avoid bifocals for a few extra months or years.

THERAPY FOR ANISOMETROPIA

There are several general principles that must be observed in the treatment of this condition. First, each case must be treated individually. Second, most authors recommend full correction for children. Third, adults should be permitted as much as three diopters' difference, or at least between two and three. Fourth, greater emphasis should be placed on the treatment of anisometropia in early childhood.

Two major problems are created by the correction of anisometropia. One of them is the creation of unequal retinal images, and the other is the creation of prismatic effects. Thus, one must find ways of helping patients adjust to the corrective glasses that they will need to wear. In this connection as in others, one is handicapped by the remarkable scarcity of papers on this subject. Back in 1939, Koch and Prangen⁴ recommended increasing the lens strength until the full correction is achieved. Two years afterward Cusick⁵ recommended trying clip-on prisms and increasing their strength until a satisfactory pair is found. He then recommended that the lenses be made with the slab-off technic. Pascal⁶ also recommended the slab-off or bicentric lenses in a later paper. Bicentric lenses, it will be recalled, are similar to bifocals, but they are not true bifocals for they have a segment, a prism, to offset the difference in the prismatic effect of the two unequal lenses. Emsley⁷ strongly advised de-centering lenses for young people to aid them in their reading. For a hyperopic patient, these would give distance correction to the worse eye. A presbyopic add should be provided for the other eye if the patient is in the proper age group for presbyopia.

Duke-Elder,⁸ in his beautiful language, states that the ideal treatment is full optical correction in each eye so as to produce distinct images on the retinae of both. In practice, this course is satisfactory and usually advisable when one is dealing with small refractive differences. But in higher-grades difficulties present themselves, associated particularly with differences in sizes of images and irregularities of peripheral distortion. He

feels that occasionally these difficulties can be overcome through the use of iseikonic lenses, contact lenses or systems of multiple lenses. He also stresses that every attempt should be made to induce full correction in children under 12 years of age. He advises that orthoptic exercises be undertaken, and if a squint has developed, that it be given proper treatment. Agreeing with other authorities, he does not feel that an adult with alternating vision should be made to wear glasses if one eye, being hypermetropic, is used for distance, and the other eye, myopic, can be used satisfactorily for near work, unless there are symptoms of eye strain.

Tait¹ makes several statements on the treatment of this condition in his *TEXTBOOK OF REFRACTION*. He feels that the patient should learn to use the better eye and should use several means in an effort to suppress cortical attention. He suggests having him turn his head to avoid the prismatic effects or, in selected cases, he advises contact lenses or glasses in which all but the central area of one lens has been frosted or occluded. To correct the aniseikonia, he suggests magnifying lenses, with little or no focal power over the eye having the smaller projective image. In addition, if the axes of the astigmatism are oblique, he recommends placing at 90 or 180 degrees for the patient's comfort.

CONCLUSION

To my way of thinking, the usefulness of contact lenses has not been sufficiently explored, or at least it has been inadequately reported in responsible journals and texts. In particular, I think that investigations of their utility in the correcting of anisometropia should be undertaken, for it is my feeling that they are especially likely to provide an answer to this one of our problems. Every ophthalmologist will recall the battle that raged in the journals over whether or not unilateral aphakes could get some degree of fusion through the use of contacts. Now, I think, there is general agreement that contacts are useful in that condition, and I certainly should like to see a report on the effects of such lenses in anisometropia—perhaps a compilation of results achieved by several doctors who have tried them.

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Arteriosclerosis Obliterans of the Lower Extremity

DONALD J. LULU, M.D.

DES MOINES

BECAUSE 11.5 PER CENT of the Iowa population is 65 years of age or over, and because the United States has 14,000,000 people over 65 and is adding 1,000 to that number every 24 hours, arteriosclerosis is one of the greatest problems facing the medical profession in this state and nation. It is the leading cause of death in this country, and it will increase in importance as our population ages.

Arteriosclerosis can be defined as a degenerative metabolic disease of the arteries, in which a cholesterol-like substance is deposited in the subintimal layer of the vessel, or a degeneration or de-

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Figure 1. Femoral arteriogram in which the needle can be seen in the common femoral artery which is obstructed at the origin of the superficial femoral artery. The profunda femoral is visualized, together with extensive collateral channels.

struction of the elastic fibers occurs, or in which there is calcification of the media. The part of the body supplied by the affected vessel becomes ischemic, and the ischemia in turn gives rise to the symptom complex known clinically as arteriosclerosis obliterans.

The etiology of this disease remains unknown, and therefore the ideal form of therapy—which undoubtedly will prove to be biochemical—has yet to be discovered.

The diagnosis may readily be made without elaborate studies. A careful history and a physical examination are usually all that are needed. It should be emphasized that the routine palpation of the femoral, popliteal posterior tibial and dorsalis pedis arteries is as important as is auscultation of the heart or lungs. The characteristic signs and symptoms of intermittent claudication, coldness, color changes, lack of hair on the foot, atrophy and gangrene are so well known as scarcely to merit repetition here.

CLASSIFICATION

For purposes of clinical convenience, arteriosclerosis obliterans may be divided into two categories.

First is the *segmental occlusion*, in which a relatively short segment of a major peripheral artery is occluded by a thrombus that has formed an atheromatous plaque. This usually occurs in the younger age group, and ordinarily the patient complains only of intermittent claudication and coldness of the foot. There are no nutritional changes in the foot, although pulsations are absent to a strikingly high level.

This type of disease may be amenable to direct surgical attack, but is dependent upon arteriography for an exact diagnosis. Whether or not direct surgery upon the occlusion can be contemplated is dependent upon the “run-off”—the demonstration of patency in the arterial tree distal to the site of occlusion by means of arteriography. Segmental occlusions comprise only a small percentage of arteriosclerosis obliterans cases, but have been the subject of a flood of enthusiastic reports in the surgical literature because direct attack has been successful in many such instances.

Second is the *diffuse involvement*—by far the more common type, and the one in which more obvious and disabling symptoms occur. Arteriography reveals a high blockage of the artery with no

distal filling, or a patent artery with marked narrowing of the lumen and irregular vessel-wall outline. In this group, the results of surgical treatment are still good, though less dramatic than in the first group.

TREATMENT

The treatment of choice for the segmental occlusion in which adequate run-off is present is an end-to-side bypass graft. Most surgeons have abandoned resection of the occluded segment and end-to-end anastomosis unless the segment is quite short.¹ They have discontinued that operation because resection of long segments has resulted in destruction of collateral circulation, with consequent gangrene and loss of the leg when the graft failed—not a rare occurrence.

The amount of collateral circulation which can develop is well demonstrated on the accompanying arteriogram of a leg in which the superficial femoral artery was obstructed (Figure 1).

The graft material to be employed is optional, for good results have been obtained in peripheral grafts utilizing arterial homografts, autogenous vein grafts and synthetic grafts. The latter have proved quite satisfactory, particularly the crimped teflon, dacron and nylon grafts which have the ad-

vantage of being readily available and which can be tailored at the operating table with a minimum of difficulty.

The addition of lumbar sympathectomy at the time of grafting affords added protection to the extremity, particularly in the event the graft fails.

The only surgical treatment short of amputation that can be afforded to the patient with the diffuse type of involvement is of an indirect nature. It is lumbar sympathectomy, a procedure which allows more blood to reach the ischemic limb by dilating the collateral vascular channels. The results of lumbar sympathectomy as performed at our institution, involving removal of the second, third and fourth sympathetic ganglia via the extraperitoneal route, have been quite gratifying. Of 222 such procedures performed on 159 patients reported by Palumbo in 1953, 88 per cent improved following the procedure, with 61 per cent good-to-excellent results as evaluated by the patients themselves.² Since that time we have performed more than 300 additional lumbar sympathectomies and have remained convinced of the efficacy of the operation, experiencing extremely low morbidity and mortality rates.

The completeness of the sympathectomy is routinely determined postoperatively by the Miner



Figures 2A and 2B. Miner starch-iodine sweat test, revealing the typical postoperative sweating pattern following bilateral lumbar sympathectomy.

starch-iodine technic, which reveals a lack of sweating in the denervated areas. Where there is no perspiration the skin retains its normal appearance, whereas in the sweating areas the iodine is activated and the starch powder is turned black. Figures 2A and 2B reveal the typical postoperative pattern following bilateral lumbar sympathectomy.

ARTERIOGRAPHY

Since late 1956, we have performed routine arteriograms at the time of lumbar sympathectomy in an attempt to correlate the site and type of occlusion with the results of sympathectomy and also to find candidates for direct surgical attack. The patient is first tested for sensitivity to the dye, and lumbar sympathectomy is performed under spinal anesthesia. If no allergy is demonstrated, 10 cc. of 50 per cent Hypaque is injected into the common iliac artery, and an x-ray exposure is made with a portable x-ray unit. On occasion, an aortogram has been performed by injecting 25 to 30 cc. of 50 per cent Hypaque into the distal aorta when a left-sided sympathectomy has been performed. To date, we have had no mortality or morbidity in over 60 such procedures. Our series is as yet too small to permit our drawing definite conclusions, but I believe the study warrants further consideration.

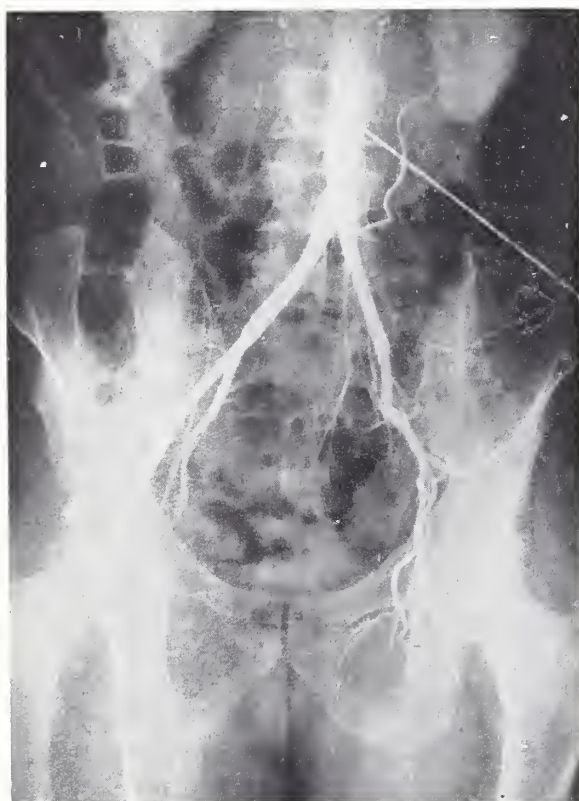
CASE REPORTS

The first patient was a 38-year-old pressman who

was admitted complaining of constant pain in the left leg of three weeks' duration, night cramps and claudication upon walking three blocks. Physical examination revealed a cool left lower extremity, with no palpable arterial pulsations. The right lower extremity had pulses of good quality. Following a lumbar sympathetic block which relieved his symptoms, a left lumbar sympathectomy was performed. The patient was relieved of his night cramps and pain, and was able to walk seven or eight blocks before claudicating.

He returned 15 months later, again complaining of pain. An aortogram was performed, revealing obstruction of the left external iliac artery (Figures 3A and B). A thromboendarterectomy and a pre-sacral sympathectomy were performed, but the vessel again obstructed. The patient improved slightly as regards pain, but 11 months later a cordotomy was performed by the Neurosurgical Service, for pain. He again became symptom free, but the development of gangrene eventually necessitated an above-the-knee amputation three years after his initial admission.

The second patient, a 62-year-old farm laborer, was admitted with the complaint of claudication of one year's duration. He was able to walk two blocks before bilateral claudication occurred. Pulsations were present on the left, but were absent below the femoral on the right. A right lumbar sympathectomy and an iliac arteriogram were per-



Figures 3A and 3B. Aortograms revealing obstruction of the left external iliac artery. The right arterial tree shows good filling throughout. Note the lack of "run-off."



Figure 4. Iliac arteriogram revealing an 11.5 cm. obstruction of the external iliac and common femoral arteries, with failure of the profunda femoral to visualize. There is excellent "run-off" in the distal arterial tree.



Figure 5. Iliac arteriogram visualizing the profunda immediately with delayed filling of the superficial femoral artery on the second exposure.

formed, but the results were poor. The arteriogram (Figure 4) revealed an 11½ cm. occlusion involving the common and profunda femoral arteries, with a good "run-off" in the distal superficial femoral artery. Exploration of the vessel was carried out shortly thereafter, in an attempt to bypass the obstruction, but sclerosis of the distal vessel made this impossible.

The third patient was a 64-year-old unemployed laborer, who was admitted with the complaint of rest pain and severe claudication after walking one block. Pulsations were absent on the right and present on the left. The right leg was cooler than the left. Since a lumbar sympathetic block gave excellent results, a right lumbar sympathectomy and iliac arteriogram were performed, and there was a dramatic relief of symptoms. The arteriogram (Figure 5) revealed obstruction of the superficial femoral at its origin, with delayed filling by collateral circulation. There was no filling below the adductor canal.

The fourth patient was a 54-year-old laborer admitted with the complaint of claudication after walking one block. Pulsations were absent below the femorals bilaterally. Following blocks, lumbar sympathectomies were performed, and the results were excellent. Postoperatively, the patient could walk over one mile without pain. The operative arteriogram (Figure 6) revealed obstruction of the



Figure 6. Iliac arteriogram visualizing the profunda and an obstruction of the superficial femoral artery. Again, the superficial femoral fills on the second exposure (delayed filling).

right superficial femoral artery, with delayed filling distally.

The arteriographic findings of the fifth case were strikingly similar. This 59-year-old bricklayer was admitted for impending gangrene of the right foot and leg. The foot was blue-black in color and pulseless, and there was ulceration over the malleoli. The patient was demanding and uncooperative. He refused to stop smoking, and against medical advice, he left the hospital on the fifth postoperative day. His right lumbar sympathectomy was followed by a most striking improvement in the extremity, which became pink in color, but he eventually required above-the-knee amputation. It is instructive to contrast the poor results in this case with the good ones in the preceding patient, despite the striking similarity between the arteriographic findings (Figure 7).

In all cases of arteriosclerosis obliterans, adjunct measures are of utmost importance. The control of diabetes, scrupulous foot hygiene and interdiction of tobacco in all forms are mandatory. Exposure to extremes of cold should be avoided when possible.

Since space does not permit a discussion of medical therapy for this affliction, suffice it to say that I firmly believe that sympathetic denervation of the ischemic limb is far superior to the use of medical vasodilators, which by their nature cause generalized vasodilatation, thus in effect depriving the one ischemic member of blood.

SUMMARY

The patient with arteriosclerosis obliterans may derive great benefit from judicious surgery. The presence of even a marked degree of vascular involvement or occlusion does not necessarily mean the loss of a limb or the need for extensive vascular replacement. A careful clinical evaluation with a correlation of the arteriographic findings may be



Figure 7. Iliac arteriogram revealing obstruction of the superficial femoral artery with poor "run-off."

the means of determining whether the conservative indirect method, or the more radical direct vascular replacement should—or, indeed, can—be employed.

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Hospital Admissions for Treatment of Alcoholism

The pioneering work of Dr. Marvin Block, of Buffalo, culminated in the passage of resolutions by both the AMA and the AHA advising hospitals to admit alcoholics. The House of Delegates of the Medical Society of the State of New York passed a similar resolution in the 1957 meeting and requested the Blue Shield plans to insure these patients.

These and many other approaches to the problem by local committees and by various other organizations indicate a growing awareness that for too long our profession has been willing to "let George do it." "George" has been, all too often, the police, the courts, the Salvation Army, or Alcoholics Anonymous.

All informed opinion recognizes now that the alcoholic is not willfully evil but is, instead, sick. He is a person who uses alcohol in an effort to

make himself feel better. The material he takes for relief is, in the doses he ingests, a poison. Medicine can no longer ignore this obligation to the sick.

Does your hospital accept alcoholics?

Does it discharge them on sobriety without a referral for further care?

Does your hospital discharge these patients if there is no concomitant injury or illness, thereby ignoring the greater part of the problem?

Do insurance plans in your community cover other varieties of poisoning, but not this one?

Medicine has never ignored a disease in the past because it was difficult to manage.

—From an editorial in the

NEW YORK STATE JOURNAL OF MEDICINE,
59:226, (Jan. 15) 1959.

State University of Iowa College of Medicine

Clinical Pathologic Conference

SUMMARY OF CLINICAL FINDINGS

A 29-YEAR-OLD housewife was first admitted to the University Hospitals in April, 1957, with an entrance complaint of tightness in the right chest and shortness of breath throughout the preceding six weeks. Three weeks before admission, the patient had been seen by her family physician, who had made an x-ray film of her chest that showed bilateral infiltration. She had then been hospitalized, and penicillin had been administered. On the tenth day, a rash had developed on the face, which subsided when the penicillin was stopped. The patient felt improved, but an x-ray film of the chest indicated no change. She had a slight cough productive of a small amount of white sputum, but had no fever at any time during the present illness.

The patient had been in good health throughout most of her life. Her usual weight was 80 lbs. She had had two pregnancies, and both her children, aged 3 and 6 yrs., were living and well. Because of mild nasal stuffiness, the patient had been accustomed to using Vicks Vapo-Rub in her nares nightly for several years.

Physical examination showed that her height was 60 in., and her weight 77 lbs. The blood pressure was 130/80 mm. Hg., the pulse rate was 80, and the respirations 20. The chest expanded normally. Breath sounds were of good quality and intensity. There were no rales or wheezes. The heart was normal. A² was louder than P². The rest of the examination findings were normal.

The urinalysis was normal. Hemoglobin was 13.5 Gm./100 cc., and the white blood cell count was 7,650 per cu. mm. The Wassermann was negative. X-ray films of the sinuses were normal. X-ray films of the lungs showed diffuse infiltrates in both bases. Bronchograms were normal. Bronchoscopy revealed no abnormal findings. Bronchial aspirations showed normal bacterial flora and no neoplastic cells.

Pulmonary-function tests showed a normal residual volume, and both vital capacity and total lung volume about 75 per cent of normal. Distribution of inspired air was normal. Maximum breathing capacity was 141 per cent of normal. The carbon monoxide diffusion capacity was 7.5 ml./min., in contrast to a normal of 20-40 ml./min. The oxygen saturation of arterial blood was normal. The arterial CO₂ tension was 30 mm. Hg., as opposed to a normal of 38-42 mm. Hg. The patient remained unchanged and was discharged without medication.

Three months later, in September, 1957, she returned as an outpatient for reevaluation. She re-

ported continued exertional dyspnea, but no other difficulties. Physical examination and chest x-ray films revealed an unchanged condition. A urinalysis was negative. Hemoglobin was 14.5 Gm./100 cc. The lung volumes, maximal breathing capacity and diffusing capacity were unchanged.

One month later, in October, 1957, she developed a fever and pain in the right chest at the costal margin. She was admitted to a local hospital and given tetracycline for five days. She improved, but continued to have shortness of breath and fatigue.

Two months later, in December, 1957, she was readmitted to University Hospitals because of her progressive dyspnea. Physical examination showed a fever of 101°F., a pulse rate of 120 and a respiratory rate of 28. There was also marked cyanosis of the lips and some clubbing of the fingers. The hemoglobin was 15.5 Gm./100 cc., the red blood cell count was 6,500,000/cu. mm., the white blood cell count was 11,500/cu. mm., and the differential was normal. The sedimentation rate was 23 mm./hr. Chest x-ray films showed a spread of the infiltration and increased nodularity of the lesions.

The patient was placed in an oxygen tent, and given sulfadiazine and elixir of terpin hydrate. In five days, the fever subsided and she was somewhat improved. Aristocort (triamcinolone) in 12 mg. doses was given every six hours. The patient improved in that oxygen no longer seemed necessary. After a week of steroid therapy, pulmonary-function tests were done. They showed a drop in vital capacity to 50 per cent. The distribution, mechanics of breathing and diffusing capacity were unchanged. The arterial oxygen saturation was 54 per cent on room air and 100 per cent + .98 volumes per cent on 100 per cent oxygen. The arterial CO₂ tension was 36 mm. Hg. Skin tests with tuberculin, histoplasmin, coccidioidin and blastomycin were negative. The patient was discharged on Aristocort, 12 mg. q. 6h. She was comfortable at rest, but remained cyanotic.

Two weeks later, she returned to the hospital in severe respiratory distress. Her pulse rate was 135 beats per minute, and her respirations 35. Cyanosis was severe, and it did not diminish significantly with oxygen therapy. A few medium rales could be heard over both lung fields. Six hours after admission, the patient vomited, seemed to aspirate the emesis, and died, artificial respiration and intracardiac adrenalin having been ineffective.

SUMMARY OF CLINICAL DISCUSSION

Dr. Richard D. Eckhardt, Internal Medicine, Iowa City Veterans Administration Hospital: I did

not know this case, but when I read the protocol it struck me that I had read something about similar cases in the literature quite recently. I then made a search through the journals, and I think I found an article that described for the first time the illness from which this patient died. Thus, though I can hope that I'm not in as much trouble as I was a little while ago, I think we should go ahead and discuss this case as a true "unknown."

This 29-year-old mother died from progressive pulmonary insufficiency in the course of a little less than a year. There was no evident cause for her disease. Presumably it was not related to an obvious infection, to an obvious cancer or to any other obvious type of disease, but it was associated with bilateral pulmonary infiltrations, progressive pulmonary insufficiency and death. The abnormal physical findings in this girl were strikingly few, although the x-ray, the clinical laboratory tests and the pulmonary-function studies revealed dramatic abnormalities. The internist found little abnormal until a few rales were heard terminally in the girl's lungs. However, he appreciated that she was ill, and I am sure she was very carefully followed and adequately treated. We are told that the x-rays showed bilateral pulmonary infiltrations which involved the lower portions of the lungs, initially, and that they subsequently increased and became somewhat nodular. Dr. Gillies, did you have some idea about what this was—histoplasmosis, sarcoid or something else?

Dr. Carl L. Gillies, Radiology: We thought it was an idiopathic progressive fibrosis.

Dr. Eckhardt: The x-rays revealed evidence of an extremely extensive and progressive disease process, but apparently it was not of a common or garden variety. In other words, I feel sure that if this had been a classical case of Boeck's sarcoid, Dr. Gillies would have been the first to say so. Presumably the X-ray Department was unable to make a specific diagnosis during the course of this girl's illness.

Now the only claim I thought I had to discuss this case was that together with physicians both at the VA and at University Hospitals I had had an opportunity to work with a young man with "silofiller's disease." That condition is produced by the irritating effects of inhaling the oxides of nitrogen that cause extensive changes in the bronchioles and interstitial tissues of the lungs, and may lead to death. Could this patient have had silofiller's disease? The patient was a housewife, and obviously could have been a farm housewife. Thus, she could have been exposed to silage fumes at the appropriate time of the year. But she became ill in April, and silos aren't filled during that month in Iowa. Consequently, I think silofiller's disease can be ruled out.

However, there are many other irritants—bacterial and viral agents or allergens—that affect the lungs and cause pulmonary infiltrations. Some

of these were described as far back as 1905 in the tea warehouses of Ceylon. The coolies who worked there contracted what was called "tea-taster's cough." Subsequently, "farmer's lung" was described by Cambell in England in 1932, and initially it was thought that this disease was caused by a fungus. Later, there came to be no agreement about its cause, although "an allergy" is now frequently alluded to. Classically, cough, fever and pulmonary infiltrations develop in farmers who have turned mouldy hay in their fields. A similar condition is "thresher's lung." People who strip bark from maple trees occasionally develop respiratory symptoms with pulmonary infiltrates. Workers in cotton mills may develop "mill fever" or "Monday morning fever." The latter of those names reflects the fact that workers frequently are most seriously affected when they have returned to work a day or two away from the "agent" which causes their trouble. The pulmonary infiltrations noted in all of these various conditions are not altogether dissimilar from those noted in today's patient, but fortunately they usually regress when the patients are taken away from the causative agent, and thus they rarely lead to progressive disease and death.

Could the patient under discussion have had tuberculosis? I suppose so, but for that disease, hers would be a somewhat unusual pulmonary picture. Her tuberculin test was negative, although I presume at her stage of serious disease it is possible that she could have been in an anergic state. Boeck's sarcoid? I reread Longcope's article and considered that possibility. Sarcoid of the lungs may not have hilar adenopathy present in the later stages when extensive pulmonary infiltrates are present. But I can't imagine that a young lady should go downhill progressively in the course of 10 months and die from Boeck's sarcoid. It would be unusual for an Iowa housewife to develop that disease anyway.

Could this be a fungus infection of some sort, such as histoplasmosis, particularly in a place such as Iowa? I suppose there is no reason why it might not have been, although our patient's course makes it seem most unlikely. There was no evidence of cavitory disease on the chest x-ray. Her histoplasmin was negative, but it can be negative in this disease. She didn't run a febrile course. I presume her sputum was cultured for fungi during her hospitalization, but there is no record that any were found. If she had had a fungus infection, I should have expected the cultures to be repeatedly positive.

I think we can rule out congenital cystic disease and bronchiectasis leading to her pulmonary fibrosis, for she had bronchograms, and no evidence of either of these conditions was found.

This girl put a commercial product containing mineral oil into her nose nightly for many years. Can this have led to lipoid pneumonia? Theoretically,

cally, it certainly can. Mineral oil is the cause, supposedly, of lipoid pneumonia. Vegetable oil presumably never causes it. Whether mineral oil can produce that disease in a relatively healthy woman is, I think, a moot question. The lipoid pneumonias we see in adults usually go under the name *paraffinoma*. They are big, conglomerate masses which are usually confused with tumors, and unfortunately sometimes a lung is removed under the mistaken impression that the lesion is a neoplasm. An infant may get a diffuse picture in the lung presumably quite similar to this, but then again, as I understand it, the course tends to be more acute. Thus, I think it is conceivable that this young lady's difficulty was due to her use of a mineral-oil product, but I think we are reaching pretty far and that her disease did not constitute the classical adult lipid paraffinoma of the lungs. But I can't rule it out. I'm sure that the physicians who took care of her looked for neutral fat when she coughed up sputum.

Could this be an alveolar cell carcinoma of the lung? I suppose so. Classically, we anticipate production of a tremendous amount of frothy, whitish sputum, although patients don't have to have it. But if, as I suppose, sputum cell study failed to disclose it, the possibility is unlikely. Similarly, other infiltrative neoplastic diseases such as malignant lymphomas, the lymphogenous spread of other tumors, leukemias, etc., would be fairly unlikely for the same reasons, although I'm not sure that we could rule them out with complete certainty. Surely the ones involving the peripheral blood would be most unlikely.

There is a group of diseases which have been studied extensively by pathologists both at the University and Veterans Administration Hospitals in Iowa City and which include various sorts of interstitial pneumonitis of the type initially described by Hamman and Rich in 1944.* Those investigators reported on a diffuse fibrosing interstitial pneumonitis. We now know that what they described was in reality a group of diseases that may run the gamut from a very acute form such as atypical viral pneumonitis that may progress very quickly to death, to a very chronic form with great masses of pseudo-tumors in the lungs that often progress very slowly. The more lung biopsies we do, the more we learn about this group of diseases. Whether this group of diseases has only one etiology or multiple etiologies, we do not know. Presumably many causative factors are operative. Nevertheless, we are receiving many more pathologists' diagnoses of various types of fibrosing interstitial pneumonitis—acute, subacute and chronic. When we get people with infiltrative lesions in their lungs which may be symmetrical or asymmetrical, we follow them for a number of months or years and study them for tuberculosis, fungi

and various other diseases. Often we can't make a diagnosis, and eventually the lesion is biopsied. Then, the surgeon tells us that the lesions are diffuse and that the lungs are firm, and the pathologists give us this diagnosis without a specific etiology. So this general group of diseases, originally described by Hamman and Rich, certainly must be thought of in a patient such as this.

Another group of diseases that must be included in the differential diagnosis of serious pulmonary infiltrative conditions have been termed "pathergic granulomatoses." These were described in an editorial in the *AMERICAN JOURNAL OF MEDICINE* by Feinberg in 1955.** Altered tissue reactivity is the essential feature in all of these conditions. The various diseases now loosely grouped under the heading "pathergic granulomatosis" include Löeffler's syndrome, periarteritis nodosa, eosinophilic granuloma, lupus erythematosus, necrotizing granulomatosis and angiitis of the lung, glomerulonephritis, allergic angiitis and Wegener's granulomatosis. You will recognize that some of these diseases are relatively benign (e.g., Löeffler's syndrome) while others carry a grave prognosis (Wegener's granulomatosis). Some are rare, and others are poorly understood. For example, we ordinarily think of eosinophilic granuloma as involving bone, although it can also involve the lung and has been described as resulting in death from pulmonary insufficiency. The disease(s) called Wegener's granulomatosis used to be regarded as invariably fatal, but non-fatal cases have recently been reported in the literature. This condition is characterized by lesions in the upper or lower respiratory passages. The patients often complain of chronic trouble with their noses or their sinuses, and may develop areas of pneumonitis that may become chronic and progressive, and may lead to death. Necrotizing vasculitis and angiitis may appear. Terminally, a focal glomerulitis usually develops, which may lead to death in uremia.

My reason for discussing this long list of relatively rare and quite confusing diseases is that we have to talk about something that kills a previously healthy young lady in 10 months. This is not a bronchitis in the usual sense. We have some very bizarre sort of illness here, and we must look around to see what in the world it could possibly be. We know that Wegener's granulomatosis is a disease which causes pulmonary infiltration and which can progress very rapidly to death. As far as I know, however, it usually involves the upper respiratory passages and the kidneys, too. We have no evidence in this case of involvement of the kidneys, and only by history do we know of involvements of the sinuses and the nose. On examination and x-ray, they were presumably normal.

Finally, we get down to a disease which has been described and recognized very infrequently in

* Hamman, L., and Rich, A. R.: Acute diffuse interstitial fibrosis of lungs. *BULL. JOHNS HOPKINS HOSP.*, 74:177-212, (Mar.) 1944.

** Feinberg, R.: Pathergic granulomatosis (Editorial). *AM. J. MED.*, 19:829-831, (Dec.) 1955.

recent years and which presumably this young lady had. This is a condition that I shall talk about very briefly; it will be discussed much more learnedly by others. This newly described entity is called "pulmonary alveolar proteinosis," and it was described by three excellent pathologists, Rosen, Castleman and Liebow, in one of the June, 1958, issues of the NEW ENGLAND JOURNAL OF MEDICINE.* It struck me when I read the article that this was indeed a startling condition. It is so startling that one has difficulty forgetting about it when he has once heard about it. These three pathologists in various parts of the country—in Washington, Boston and New Haven—gathered together cases from various areas in the United States, and one of them was from the Pathology Department at the State University of Iowa—presumably the patient under discussion today.

These various cases occurred in people who were between 20 and 50 years of age. I think they had 27 cases, and about eight of them had died in the course of the follow-up. These individuals had chronic disease of the lungs. The histologic picture was one of tremendous outpouring of proteinaceous material, rich in lipid, into the alveolar areas of the lungs. This material was supposedly put out by the alveolar septal cells. The condition is of unknown cause. Those who die do so from progressive pulmonary insufficiency. Those who live have a variable amount of residual or chronic pulmonary disability. This disease has not been recognized in the past, but I think it fits this girl's picture perfectly. It is a disease that is mainly limited to the lungs and is essentially afebrile. Although the patient under discussion was febrile on one or two occasions, she supposedly had superimposed infection in her lungs at those times. Otherwise,

she had a disease which caused a progressive increase in pulmonary insufficiency. This disease is now undergoing considerable study by pathologists in many portions of the country, and hopefully, that work will lead to a better understanding of the etiology. Thereafter a treatment may be found.

It seems likely that some agent—drug, virus or bacterial agent—may be producing this disease which supposedly we did not see 10, 15 or 20 years ago, at least to any great extent. If as physicians we are playing a role in causing it, surely we should be able eventually to recognize the cause and do something to prevent the condition. That is what we hope to do.

Now, I should like Dr. Bedell to tell us the results of his detailed pulmonary-function tests. I think they are fascinating. They have helped all of us understand pulmonary physiology much better. I think he probably can come close to telling the pathologist where he will find his lesion.

Dr. George N. Bedell, Internal Medicine: I don't think I can come as close as Dr. Eckhardt thinks.

The patient was first seen in the pulmonary function laboratory in May, 1957, and the pulmonary function tests listed in Table 1 were done. They showed that at that time she had a normal arterial saturation, 96 per cent; a low Pco₂, 30 mm. Hg.; an essentially normal pH; and, when she breathed 100 per cent oxygen for 10 minutes, a 100 per cent plus 1.31 volumes per cent arterial saturation. This latter excludes an anatomic or physiologic right-to-left shunt. We had no reason to suspect an anatomic shunt because she had normal arterial saturation on air. The rest of the

* Rosen, S. H., Castleman, B., and Liebow, A. A.: Pulmonary alveolar proteinosis. NEW ENGLAND J. MED., 258:1123-1142, (June 5) 1958.

TABLE 1
PULMONARY FUNCTION TEST FINDINGS

Test	Normal Values	May 15, 1957	September 12, 1957	December 19, 1957
<i>Lung Volumes</i>				
Vital Capacity	2,460 ml.	1,830 (74%)	1,730 (70%)	1,220 (50%)
Residual Volume	620 ml.	680 (111%)	680 (111%)	550 (92%)
Total Lung Capacity	3,080 ml.	2,490 (81%)	2,410 (78%)	1,770 (59%)
<i>Ventilation</i>				
Minute Volume	6-8 L/min.	11.2	—	9.2
Single Breath N ₂ Test	< 1.5% N ₂	5.0	3.2	—
<i>Mechanics of Breathing</i>				
Maximal Breathing Capacity	73 L/min.	103 (141%)	88 (120%)	78 (111%)
Maximal Expiratory Flow Rate	450-600 L/min.	166	210	72
Maximal Inspiratory Flow Rate	400-600 L/min.	188	167	143
<i>Diffusing Capacity</i>	20-40 ml./min.	8	7	8
<i>Arterial Blood</i>				
O ₂ Saturation	96-99%	95.8	—	54.5
Pco ₂	38-42 mm. Hg.	30	—	36
pH	7.38-7.40	7.37	—	7.40
O ₂ Saturation After Breathing O ₂ for 10 min.	100% + 2.00 vol%	100% + 1.31 vol%	—	100% + 0.98 vol%

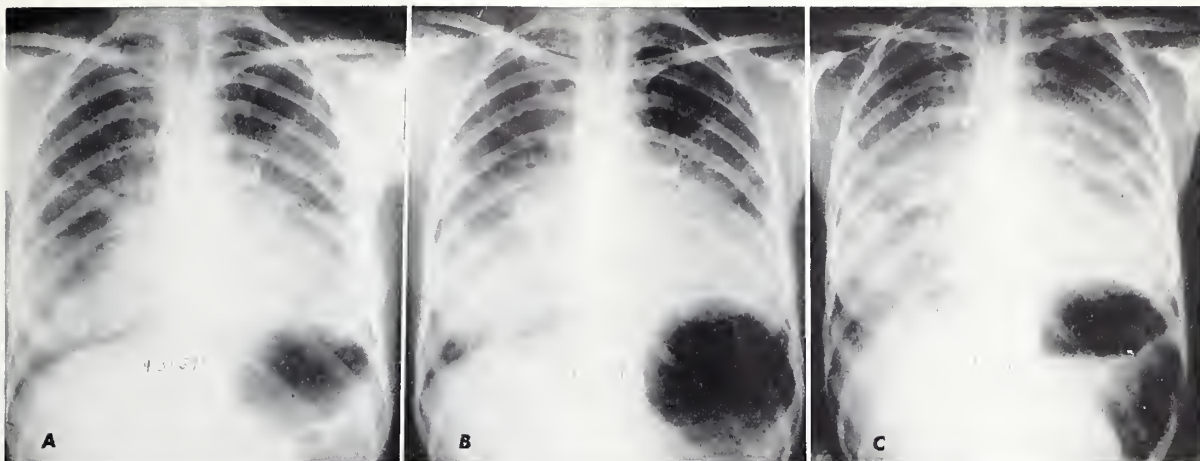


Figure 1. Chest roentgenograms taken on April 30, September 12 and December 26, 1957, respectively, showing slowly progressing diffuse interstitial infiltration throughout the mid and lower lung fields.

tests showed that her vital capacity was 74 per cent of predicted normal, her residual volume was normal, and she had uneven distribution of inspired air. Her maximal breathing capacity was normal. There was nothing to suggest the airway obstruction which is a cardinal characteristic of bronchial asthma or pulmonary emphysema. Her diffusing capacity was less than half of predicted normal.

From these studies, I should say that this patient had trouble getting oxygen across the alveolar capillary membrane. The air in such an individual gets down into the alveoli satisfactorily, but there is a block at the alveolar capillary membrane. This membrane is altered; it is either thicker than normal, or its character is different from normal. The clinical impression was that this patient had an alveolar-capillary block syndrome, probably diffuse pulmonary fibrosis. She was studied again in September (Table 1), and there was little change in the pulmonary-function studies.

She came back in December, and at that time a striking change had taken place. The arterial saturation was 54 per cent; the P_{CO_2} was 36 mm. Hg. (still low); and the pH was normal. When the patient breathed 100 per cent oxygen, her arterial blood did not reach normal values. I should expect that the dissolved oxygen would be greater than 0.98 volumes per cent, but I don't think she had enough evidence of physiologic shunt in the lungs to explain a saturation of 54 per cent. Her diffusion was still very low, her MBC was normal, and her vital capacity was low. Our clinical impression was the same.

Dr. John R. Carter, Pathology: What would be the physiological test findings in a patient with lobar pneumonia, and how would they compare with these findings?

Dr. Bedell: In lobar pneumonia, let's say the upper left lobe is involved, for the sake of this discussion. The findings would be similar except for

two things. There would be evidence of a physiologic shunt—failure of arterial blood to reach full volumes for O_2 saturation after the patient had breathed 100 per cent O_2 for 10 minutes; and diffusion would be closer to normal. In the patient with lobar pneumonia, the consolidated lobe is not ventilated, but it is perfused with blood (a physiologic shunt). Presumably the rest of the lung is normal so that diffusion would be only slightly altered.

CLINICAL DIAGNOSIS

Pulmonary fibrosis, Hamman-Rich syndrome.

DR. RICHARD ECKHARDT'S DIAGNOSIS

Pulmonary alveolar proteinosis.

ANATOMIC DIAGNOSES

1. Pulmonary alveolar proteinosis.
2. Suppurative pneumonitis, *Nocardia asteroides*.

Dr. Carleton D. Nordschow, Pathology: Dr. Eckhardt was very exact in his diagnosis. The salient findings were primarily in the lungs. The lungs were large and filled the entire pleural space. They were very rubbery and quite consolidated. Areas of suppurative pneumonia were present in the central and lower portions of the lungs. The lungs had a slight rusty-red tinge to them. The abscess apices projected upon the pleural surface. The hemisected surfaces of the lung showed solidity, and there was little air in the lung. It possessed the appearance of a solid viscus such as the liver.

This disease was described in the *NEW ENGLAND JOURNAL OF MEDICINE* last June, some time after Dr. Bedell saw this patient. This case was No. 27 in the series presented there. It is apparently a new disease and has a very distinctive and different morphological appearance. This consists, as Dr. Eckhardt has said, of a filling of the alveoli and considerable distortion of them by material which, when observed in microscopic sections, is pink

and granular, and contains protein particularly rich in lipid. Special stains demonstrate a little more clearly the chemical nature of this material. There is pronounced distortion of the configuration of alveolar spaces, with complete consolidation by granular, pink material, and prominent thickening of the alveolar septa. Acicular, or needle-shaped clefts are present throughout the exudate. These represent areas of dissolved cholesterol. The material was present within the lumen of the tracheo-bronchial tree, and I think it is fair to say that the respiratory mucosa was somewhat hyperplastic.

In several areas of the lungs, an extensive suppurative pneumonitis was present, which became quite necrotizing in many areas. This was due to *Nocardia asteroides*. The periodic acid Schiff stain which utilizes a red dye rosanalin to pinpoint areas of polysaccharide composition stained the intra-alveolar exudate intensely red. This, along with ancillary tests, was indicative of the fact that much of the material was carbohydrate. Also, there was much stainable lipid material distributed randomly in the intra-alveolar exudate. In a slightly congested normal lung, one could see the capillaries. The alveolar septa were delicately thin, and there was intimate proximity of the capillaries to the alveolar interface where air would be in contact with the capillary surface. Also, there was a lack of alveolar lining cells. In Figure 2, note the consolidation of the alveolar spaces and the tremendous thickening of the alveolar septa by collagenizing connective tissue and by a few chronic inflammatory cells.

With reference to the capillary-alveolar block syndrome, it is important to point out two things which have been occasioned by this reaction to injury. First, the number of capillaries has been substantially reduced. Second, they are removed completely from proximity to the alveolar interface. This has been occasioned by the deposition of collagen subsequent to proliferation of the fibroblastic tissues so that the capillaries are no longer bathed by the alveolar air.

In a different portion of the lung, one could see the characteristic septal cells which are present around the interior surface of such alveolar spaces. It has been felt by the group responsible for the recent article on this subject that the intra-alveolar detritus derives from necrosis of these cells. The authors do not indicate the nature of the cellular injury, but whatever it may be, they feel that the cells are damaged and continue to proliferate and slough into the lumen as they become necrotic, and that therefore the material present in the alveolar space is the result of cytoplasmic and nuclear degeneration. Laminated structures have been found, and they look somewhat like small, distorted hemisected onions. These have not been further identified, and the authors have not been able to demonstrate a definite etiologic agent. From the morphology of the disease, it is

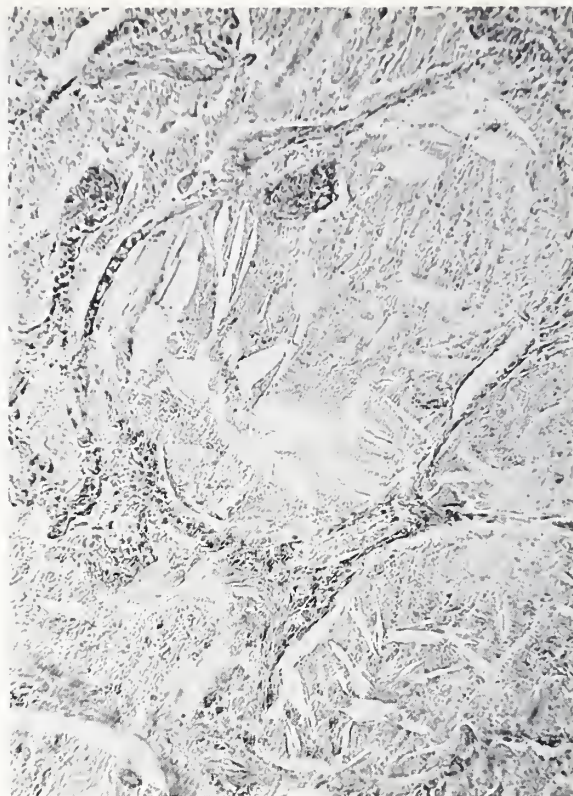


Figure 2. Microscopic section of lung showing alveolar proteinosis. The alveoli are filled with red-staining (periodic acid Schiff) exudate.

quite understandable why this woman had such a pronounced inhibition of oxygen transport between the alveolar space and the adjacent capillaries.

Dr. William Hamilton, Anesthesiology: How do you explain the drop in arterial O_2 saturation from 94 per cent to 54 per cent in the face of no change in diffusing capacity? Do you dismiss the possibility of physiologic shunt in this patient, even though the arterial blood did not reach full values for O_2 saturation after she had breathed 100 per cent oxygen for 10 minutes?

Dr. Bedell: That is a good question, and I don't know the answer completely. In May, she had an oxygen saturation of 96 per cent, which is normal, and a diffusing capacity of 8 ml. of CO per millimeter of mercury per minute. In December, she had an arterial saturation of 54 per cent, and her diffusion was exactly the same. This means to me that there isn't a good correlation between the two tests. I have seen this in a number of patients. By the time the diffusing capacity of the lungs is down to 8 ml. CO/mm. Hg./min., it can't go down much farther. Pathologic change within the lungs can go on, and will not be reflected in a further lowering of diffusing capacity.

In regard to the second point, I think I gave the impression that venous admixture plays no

part here. That is wrong. An examination of the slides made it clear that some of these alveoli must have received no ventilation at all. They were filled up with proteinaceous material, yet there was blood flowing through the capillaries adjacent to these alveoli. It is obvious that this blood couldn't get any oxygen and couldn't eliminate any CO_2 . The arterial blood of a normal person who has breathed 100 per cent oxygen for 10 minutes will be saturated, and will contain an additional 1.5 to 2.0 volumes per cent of O_2 dissolved in plasma and watery parts of the red blood cells. This patient's arterial blood did not reach those values, and for that reason I think 54 per cent arterial saturation can be partly the result of venous admixture and, certainly, partly the result of diffusion block.

Now, I should like to discuss another problem in regard to this patient. When she was originally seen, she was hyperventilating. We recognize several stimuli to respiration. An elevated Pco_2 will stimulate the respiratory center of the brain. Arterial hypoxemia of 80 to 85 per cent will stimulate the chemoreceptors located in the carotid body which are sensitive to changes in Po_2 . Also, pH changes in the blood can account for hyperventilation. But in addition to these three things, there must be reflexes within the lung itself that cause hyperventilation. I think that this last was the reason why this patient was hyperventilating. Initially, she did not have hypoxemia, so that would not have been a stimulus to respiration. Since her Pco_2 was low, it would not have been a stimulus. And her pH was normal. The most likely cause of hyperventilation, then, was a parenchymal lung lesion irritating some sort of nerve fibers.

Dr. Eckhardt: Why is this disease called "alveolar proteinosis," and is it related to mucoviscidosis?

Dr. Nordschow: In many other cases, some which have been only biopsied, productive fibrosis of the alveolar septa such as I have shown you has not been found. In many areas the septa are exceedingly thin and avascular, and do not show inflammation. The term *proteinosis* comes from the fact that the intra-alveolar material is probably a lipoprotein or mucoprotein, or a protein complex of lipids and carbohydrates. The reason some inflammatory designation has not been added to the nomenclature, I feel, is that there is a lack of cellulitis in many of the microscopic preparations. I know of no relationship with mucoviscidosis. I am sure that the stains which we used would show a similar color reaction in mucoviscidosis, but so far as I know there is no chemical relation between the two, nor do I know of any studies that have been conducted in an attempt to show such a relationship.

Dr. Rubin H. Flocks, Urology: Do you think that knowing what we know now, it would be pos-

sible to stain the sputum histochemically and make a diagnosis?

Dr. Paul M. Seebohm, Internal Medicine: Dr. Bedell, did this patient have any sputum?

Dr. Bedell: Not very much; just a little bit. Dr. Nordschow, if we had sputum in such a case, would your stain be specific enough to indicate this disease?

Dr. Nordschow: No, it wouldn't. The stain that we used, the periodic acid Schiff stain, is quite non-specific. It shows polysaccharides, but that is all it does. The material that is normally produced by the respiratory epithelium in the tracheobronchial tree is rich in polysaccharide, and thus differentially one couldn't hope to reach a diagnosis on the basis of staining.

Dr. Raymond F. Sheets, Internal Medicine: I noticed a report recently of three or four women who had developed parahilar infiltrates that cleared up when they stopped using one of the inventions of modern science, a spray designed to keep hair in place. Apparently, these sprays have some sort of resin base which causes the difficulty. I should like to know how this woman combed her hair.

Dr. Seebohm: Since about two of the cases in the series referred to during this discussion were Marine sergeants, I doubt that hair spray can be the etiologic agent in this disease. But Dr. Bedell, I believe, is not aware that this lady used Spray Net or any other such hair-fixative.

Dr. Flocks: Did any of the other patients in the series have intravenous gum that may have accounted for the lesions?

Dr. Seebohm: As I recall the case analyses, there was no unusual trauma, injury or illness of the patients other than the respiratory one. However, I'm not sure a positive statement was made that they had received no intravenous plasma expanders such as Dextran.

Dr. Bedell: I should like to say one other word on how to handle a patient like this one, even though there is no particular treatment that is going to help this kind of condition. I think Dr. Nordschow has pointed out that this condition would be very difficult to differentiate clinically from a diffuse interstitial fibrosis of unknown etiology. There are many patients who present essentially this same clinical and physiologic picture. Some of them improve on steroid therapy. This patient was given steroids, but as far as we can tell, they had no effect. Because of the physiologic nature of the alveolar-capillary block, 70, 80 and 100 per cent concentrations of oxygen in the alveolus will penetrate the alveolar-capillary barrier. On this therapy, the arterial saturation will come to normal, and the patient will be much more comfortable. Since patients do not have a depression of the respiratory center of the brain, there is no danger in giving them oxygen over a prolonged period, and that is an important point. Thus, if





Tetracycline with Citric Acid **LEDERLE**

one has a patient like this who has a potentially reversible lesion, the immediate treatment is oxygen, and the long-term treatment is steroids, which will be helpful in some cases and not in others.

Dr. Seebohm: Dr. Eckhardt, in this series do you remember how long some of the patients who did not die have been followed?

Dr. Eckhardt: As I understand it, one of them had shown considerable improvement clinically and was essentially well, although his x-ray film was still quite abnormal. One or two others, as I understand it, were improved but were not clinically well. They still had some pulmonary disability.

Dr. Flocks: Was there any change in their abodes, manners of living or occupations that might have accounted for the alveolar proteinosis?

Dr. Seebohm: I think that there were not. There was no consistency in their occupations, other than that there were slightly more patients associated with the lumber business than with any other single occupation. Four of them were lumber-yard workers and one was a carpenter, among a total of 27. I think it is clear after reading the article that the field is wide open for original epidemiological investigation for the basic cause.

Dr. Robert D. Gauchat, Pediatrics: Has anyone tried to use nebulized Tryptar to free-up, loosen and digest this material, so to speak, so that the patient can cough it up?

Dr. Seebohm: I'm not sure whether that was tried or not. We had some difficulty in making that work in patients who have asthma with bronchial obstructions from mucus. Other people seem to have greater success with it than we have in the Department of Medicine. We have given it a play

in the past, and it sounds good, but apparently it doesn't get down below the plugged area.

Dr. Gauchat: It works in patients with fibrocystic disease. I think it should be mentioned that there are valid indications to do a lung biopsy so as, if possible, to establish a diagnosis. Under such circumstances, also, the physician should be encouraged to search out specific points in the history that might help in establishing the etiology.

Dr. Seebohm: One question that has been asked is: "Has there been a change in incidence in this disorder?" The 27 cases reported occurred over a period of five years, the first one having occurred in 1953. I think the apparent increase in incidence during the ensuing year or two was the result of the collecting efforts of the National Institutes of Health. The lady whom we have been discussing had her illness just this past year.

However, during this same period, we have had a number of patients with clinically similar lesions of the diffuse interstitial type but which for one reason or another we did not think were this disease. Very recently, a patient on the medical wards had a lung biopsy that showed more interstitial fibrosis than this lady had. He responded to steroid therapy and is still being followed.

It is the general impression of the people who are interested in lung disease here that the incidence of this type of disorder—a diffuse infiltrative condition of the lungs that looks to be septal or interstitial—has increased. We are seeing and studying more patients with this picture than we did a few years ago. There may be other reasons for this increase, namely that we talk about these conditions more, and thus encourage other physicians to send their problems of this type to us.

Annual Pediatric Conference

The Raymond Blank Memorial Hospital for Children, a subsidiary of Iowa Methodist Hospital, Des Moines, will hold its Annual Pediatric Conference on February 27 and 28, 1959.

The participants will include: Waldo E. Nelson, M.D., professor and chairman of pediatrics at Temple University; Wallace W. McCrory, M.D., professor and chairman of pediatrics at S.U.I.; Harry Medovy, M.D., professor and chairman of pediatrics at the University of Manitoba; Joseph D. Boggs, M.D., pathologist at the Children's Memorial Hospital of Chicago; Samuel Spector, M.D., associate director of pediatrics at the University Hospitals of Cleveland; Charles H. Read, M.D., associate professor of pediatrics at S.U.I.; and Lee Forrest Hill, M.D., medical director at Blank Memorial Hospital.

The topics and speakers will be as follows:

Friday, February 27

- "Absence of Abdominal Musculature"—Dr. Roland E. Berry
- "Pathology of Jaundice in Infancy"—Dr. Boggs

"Growth Disorders Caused by Localized Abnormalities in Kidney Function"—Dr. McCrory

"Bronchial Asthma in Children"—Dr. Joel D. Tieglund

"The Assay of Pituitary Growth Hormone in Human Serum"—Dr. Read

"A Study in Complete Parenteral Alimentation"—Dr. Spector

"Some Current Concepts in Infant Feeding"—Dr. Hill

Saturday, February 28

"Physiologic Aspects of Congestive Heart Failure"—Dr. Harold Margulies

"Heart Failure in Infancy—Causes and Management"—Dr. Medovy

"Infection in the Newborn Infant" (The annual Lee Forrest Hill Lecture)—Dr. Nelson

Thomas Burcham, Jr., M.D., will conduct a pediatric x-ray conference; Dr. Berry will conduct a clinical pathologic conference. There will also be case presentations and question sessions.

For complete details and pre-registration forms, write to Raymond Blank Memorial Hospital for Children, Des Moines 14, Iowa.



A "MUST" FOR 1959

If the American public is not to be saddled with an initially tremendous and constantly increasing federal medical and hospital bill, the medical profession, in cooperation with the commercial insurance carriers the hospital and dental associations, and the Nursing Home Association must find a means of enabling almost all elderly people to prepay the expenses of their illnesses. And it must find the answer this year, since it seems most unlikely that a second chance will be forthcoming!

The threat is embodied in the Forand Bill, a legislative proposal that would require the federal government to provide up to 60 days of hospital care and up to 120 days of nursing-home care annually, as well as to defray certain surgical costs, for all recipients of Social Security benefits. At the start, the program would cover at least 12,500,000 people, and would cost at least \$1,000,000,000 per year. Later, one might reasonably expect liberalizations in the form of reductions in age limits and extensions of benefits. To treat these patients, doctors would have to consent to a federally established fee schedule.

One of the principal dangers posed by the Forand Bill and its inevitable sequelae is a taxpayer revolt that would result in the collapse of the Social Security System, upon which a majority of employed people have come to depend for all or part of their support after retirement. On January 1 of this year, Social Security tax rates were raised .25 per cent and the tax base was broadened \$600, so that now both employers and employees are required to contribute 2.5 per cent of the first \$4,800 earned. Moreover, the plans for future increases were accelerated. By half-percentage-point jumps in 1960, 1963, 1966 and 1969, the rate is scheduled to reach 4.5 per cent each for employer and employee. In 1969, if present plans hold, an employee earning \$4,800 or more will be paying the government \$216 per year in Social Security tax, and his employer will be paying another \$216 in his behalf. Self-employed individuals will be paying \$324.

Even according to the preliminary plans, the Forand Bill would require an immediate increase in the Social Security tax to 2.75 per cent each for employer and employee on the first \$6,000 of the employee's annual wage or salary, and no one

has any means of knowing that such an addition would be enough.

Currently, the Social Security System is operating in the red. Even with the interest earned by its huge trust fund, it suffered a loss of \$125,000,000 in 1957 and a loss of between \$700,000,000 and \$800,000,000 in 1958, and a deficit of a roughly similar size is anticipated this year. If the newly established step-by-step tax increases are followed and if benefits are no further liberalized—two tremendous *ifs*—Social Security will be in the black from 1960 onward, but an addition such as Rep. Forand (D., R.I.) proposes could turn it once more toward financial disaster.

FORAND CAN BE STAVED OFF THIS YEAR

In the session of Congress that is now in progress, it seems unlikely that the Forand Bill will get to the floor of the House. Rep. Mills (D., Ark.), chairman of the House Ways and Means Committee, opposes it and is planning a series of maneuvers to keep it bottled up. One such device, according to a feature story in the January 12 WALL STREET JOURNAL, will be that of refusing to divide his group into subcommittees. With only the large committee functioning, there will be time only for the consideration of perennial appropriation bills.

In 1960, however, an election year, the Forand Bill or something like it is almost certain to be voted upon in the House and Senate, and unless voluntary health insurance is obviously on the point of erasing the problem of prepayment for elderly people, its chances of passage will be excellent. Congress has liberalized Social Security benefits during each of the election years since 1950, and the Forand Bill has numerous and influential supporters.

NON-GOVERNMENTAL GROUPS ARE WORKING HARD

At the insistence of Rep. Forand, the House Ways and Means Committee requested a fact-finding study by the Department of Health, Education and Welfare a year ago, and the Department's report was scheduled for presentation on or about February 1 of this year. From it, all who are interested can glean presumably impartial information about the probable costs of the different federal approaches to a solution—expansion of Social Security; federal grants to states; government reinsurance of private insurance plans; and government subsidies to private health plans.

But doctors and all other people who are concerned about the preservation of free enterprise don't want any of those alternatives, at any price. Instead, they have plans which will provide for the needs of even marginally-solvent elderly people, after some modifications have been effected, which will provide for them far more satisfactorily, and which, in addition, will help to prevent the devaluation of the dollar that is the inevitable

consequence of huge federal spending and will forestall the growth of bureaucracy.

In this instance, let it be noted, Medicine is not just against a proposed piece of legislation; it is advocating, and indeed endeavoring to provide, something a great deal better!

In 1957, the last full year for which figures are available, voluntary hospitalization plans protected 121,000,000 Americans, and voluntary medical-surgical cost plans covered 109,000,000 of them. Assuming that further gains occurred in 1958, we can say rather confidently that 70 per cent of the population is now providing its own protection against the costs of illness.

Those figures, of course, relate to the total American population. As for elderly people, it is estimated that only about 40 per cent are now covered by voluntary insurance, and though some of the remaining 60 per cent are no doubt subsisting entirely upon "relief" payments, the bulk of them can and must be provided for through adaptations of the voluntary program.

Continental Casualty Company, during the past several months right here in Iowa and in Illinois, Wisconsin and Indiana has been offering a policy to persons 65 years of age and over without medical examination and at a price of \$6.50 per month or less. The firm's experience has been good enough so that it began marketing it in California on January 1 and recently announced the extension of the offering to seven Eastern states. Blue Cross-Blue Shield, together with several commercial insurers, are enabling retired workers to retain their group-insurance memberships after quitting work, and are currently attempting to find ways of accommodating elderly people who haven't previously been insured.

DOCTORS MUST EXHIBIT STATESMANSHIP

If the voluntary prepayment plans are to succeed in this task, physicians must agree to make some monetary sacrifices. Specifically, they must undertake to let insurers pay them no more for the care of impecunious elderly people than they would receive from such patients if insurance were not a part of the picture.

Thus, physicians are being asked for a type of statesmanship. This time, it is doctors who must guard the Social Security System against financial disaster; preserve the American free-enterprise system; and guard the United States dollar against further rapid devaluation.

"OUT, DAMNED SPOT!"

Surgeons and other health service personnel, it seems, must despair of absolute manual asepsis and lament with Lady Macbeth, "... all the perfumes of Arabia will not sweeten this little hand. Oh, oh, oh!"

In the second of the 1958-1959 series of Becton, Dickinson lectures at Seton Hall College of Medicine and Dentistry on December 12, Dr. Philip B. Price, dean of the College of Medicine at the University of Utah declared that it is impossible either to kill or to remove all germs in the skin without destroying the skin itself. Appreciable numbers of them begin to appear in washings of the skin after 10 to 15 minutes of scrubbing, and it appears that hidden reservoirs for them lie beneath the successive layers.

Describing the bacteriology of the skin, Dr. Price reported that both "transient" and "resident" germs are found on the surface of our bodies. Transients, he said, "vary tremendously in number and kind. . . . Fortunately for the health of man, most of the extraneous microorganisms that get on his skin soon disappear. Some die; others fall off, are rubbed off on clothes or are washed off." It takes from one to eight minutes of washing with soap and water to remove all transients from the hands and arms, but they can be killed with relative ease by chemical disinfectants. Yet the resident bacteria, the stable population of the skin, are another matter. Inasmuch as they are firmly attached to the cutaneous surface, washing removes them only very slowly, and they are less susceptible than transients to the action of disinfectants. Residents, Dr. Price says, are largely Staphylococci of low pathogenicity, but a few specimens of Staphylococcus aureus and other pathogenic bacteria are almost always present.

Reviewing the results of some serial basin hand-washing tests that he conducted, Dr. Price offered some comparative evaluations of hand-disinfectants. "For routine surgical use," he said, "ethyl alcohol containing 70 per cent alcohol by weight is recommended for several reasons: (1) it is somewhat less expensive than the more concentrated preparations; (2) it wets the skin well, spreads smoothly and evaporates slowly; (3) it does not injure the keratin or extract the lipids of the epidermis; and (4) in consequence it is almost perfectly innocuous on the skin."

Isopropyl alcohol, he says, might well be substituted for ethyl alcohol in preparations used to disinfect the field of operation, but it is not recommended for routine preoperative preparation of the hands. The best of the mercurials reduced the flora, in Dr. Price's tests, by less than half in three minutes, but he hesitated about condemning them. "One or two per cent iodine dissolved in 70 per cent alcohol," he said, "is an excellent skin disinfectant. It spreads evenly, dries slowly, and on evaporation does not leave a rim of concentrated iodine to burn the skin." But aqueous

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solutions of iodine should not be used on the skin, for they may cause severe burn or even iodism from absorption. The efficacy of Zephiran (benzalkonium chloride), he warned, is not so great as has generally been supposed.

It has been asserted that surgeons who operate regularly need no longer scrub in the old-fashioned manner but can merely lather their hands and arms for two or three minutes with G-11 (hexachlorophene) detergent in bar soap, liquid soap or Phisoderm. Dr. Price reported that on the contrary such a regimen should not be employed to the exclusion of the conventional scrubbing of hands and disinfection of hands and operative field. A hexachlorophene detergent, in his tests, reduced cutaneous flora no more effectively than did washing with Ivory soap.

EXPLAINING ORGANIZED MEDICINE TO THE PUBLIC

As a guest editorialist, Dr. Raymond A. Berger wrote an article entitled "Your County Medical Society" for publication in the December 6 issue of the DAVENPORT TIMES. In it he explained the objectives and functions of the Scott County Medical Society, its relations with the ISMS and the AMA, and its support of Iowa Medical Service (Blue Shield).

We have no way of knowing whether Dr. Berger's opportunity to use the columns of his town's newspaper was one that he asked for, or was one that was offered to him, but in either case we think he did himself and his fellow physicians a considerable favor in availing himself of it. Other men in other towns throughout the state might well follow his example, and if some of them would like some help in assembling ideas or in writing the actual manuscripts, we gladly offer our services.

It is astounding how few of our fellow citizens are aware of the county and state medical societies, or have any clear idea of the services which they perform, either directly or indirectly, for the public benefit. The AMA, of course, is an organization with which most people think they are familiar, but too many of them have serious misconceptions about it.

Because most people are inclined to give more credence to statements that they see in print, and because they are especially willing to accept the statements of writers whom they know and for whom they have considerable admiration, local newspaper articles by local physicians strike us as the finest possible kind of public relations work.

Letter to the Editor

Sir:

A conversation that I had with a young physician in northwest Iowa at a recent medical convention gave me reason to wonder at the progress in medicine and medical sciences during the past 50 or more years that I have been in practice.

"Dr. Ellyson," he told me, "I graduated from an accepted medical school and interned in a first-grade hospital, and during that period I did not see a single case of typhoid fever, smallpox, diphtheria, erysipelas, scarlet fever or malaria."

My first thought was that he must have been asleep, for those six diseases were among the chief "killers" when I located in northwest Iowa over 50 years ago.

One cannot estimate how many billions of dollars have been saved through the near elimination of those six "great killers," and if in another half-century similar blows are dealt to polio, tuberculosis, cancer, arthritis, drunken driving, alcoholism and the infections, we shall be accomplishing more than reaching the moon or any other point in outer space.

In health activities as in most other fields, more has been accomplished in the past half-century than in all the rest of the time since the beginning of man, and if I could have chosen, I should rather have had a small part in this period of accomplishment than in any other era.

Sincerely,

C. W. ELLYSON, M.D.

Waterloo

STIES ARE LINKED TO NOSE INFECTION

Dr. P. W. Monckton Copeman, of London, has reported finding, in a study of patients with recurrent sties, that 94 per cent had *Staphylococcus aureus* in the anterior nares.* Local treatment to the nose cleared up the sties in most cases.

Although treatment of the nose alone is generally sufficient, Dr. Copeman explained that it is logical to treat the sty itself as well, so as to avoid transference of the infection. He recommends the use of a non-systemic antibiotic ointment on both the eyelids and the anterior nares.

* Copeman, P. W. M.: Treatment of recurrent sties. LANCET, 2:728, (Oct. 4) 1958.

THE JOURNAL *Book Shelf*



BOOKS RECEIVED

LIPIDOSES: DISEASES OF THE INTRACELLULAR LIPID METABOLISM, THIRD EDITION, by *Siegfried J. Thannhauser*, M.D., Ph.D. (New York City, Grune & Stratton, 1958. \$19.75).

LESIONS OF THE LOWER BOWEL, by *Raymond J. Jackman*, M.D. (Springfield, Illinois, Charles C Thomas, 1958. \$15.50).

CENTAUR: ESSAYS ON THE HISTORY OF MEDICAL IDEAS, by *Felix Marti-Ibanez*, M.D. (New York City, M.D. Publications, Inc., 1959. \$6.00).

BOOK REVIEWS

A HISTORY OF PUBLIC HEALTH, by *George Rosen*, M.D. (New York City, M.D. Publications, Inc., 1958. \$5.75).

This comprehensive history of public health by one of America's leading medical historians presents the interesting story of man's endeavors to protect himself and his communities against disease from the earliest days down to the present.

Certain epochal events are emphasized in the first few chapters. We are told that the terms *endemic* and *epidemic* first appeared in the writings of Hippocrates (460-378 B.C.), the first man to present a causal relationship between environmental factors and disease. The Romans' work in building a system of aqueducts and organizing their water supply a few centuries thereafter is pointed out as a noteworthy "first." Early in the Renaissance, in 1530, appeared the epochal poem of Frascotoro, a Veronese physician and poet, entitled "Syphilis sive morbus Gallicus," in which the disease syphilis was first described and given its name.

A century later, van Leewenhoeck, a linen draper of Delft, Holland, devised a simple magnifying lens, the forerunner of the present compound microscope. He described mobile microorganisms observed in rain water, in soil and in healthy human excretions. These corresponded to what were later recognized as bacilli, micrococci and spirilla.

The period of 80 years between 1750 and 1830 is described as the pivotal period in the evolution of public health—of the arousing of public understanding that the problems of health and disease are social phenomena of importance to the individual and to the community. The continued prevalence of disease and the threat of epidemics emphasized the need for wider education for personal hygiene and sanitary reform.

The sanitary reform movement of the nineteenth century, out of which public health developed along with industrialization, is described in a special chapter. The increase in the numbers of factory workers, with its problems of housing and industrial hazards, led to

social changes accompanying the growth of urban communities. It was a period, also, of great epidemics, and on four occasions in the nineteenth century, Europe and America were scourged by severe invasions of yellow fever and Asiatic cholera.

The last chapter is entitled "The Bacteriological Era and Its Aftermath," and occupies the final 200 pages. Pasteur began his investigations on the different forms of fermentation in 1854, and the ensuing 20 years of his work included a five-year period of studying the silk worm diseases and their control—an investigation that soon led to a concept of wound infection.

In 1874 there came to Pasteur the historic letter from Dr. Joseph Lister, of Edinburgh, with these words of homage: "Allow me to tender you my most cordial thanks for having demonstrated to me, by your brilliant research, the birth of the germ theory of fermentation and putrefaction and thus furnished me with the principle upon which alone the antiseptic system of treatment is carried out, and which I have been laboring for the last nine years to bring to perfection. Surgery is greatly indebted to you."

All bacteriological investigations were distinctly advanced by the introduction of solid culture media by Dr. Robert Koch. His work on the Anthrax bacillus with the demonstration of spores, the discovery of the tubercle bacillus in 1882, and the spirillum cholera Asiaticae in 1884 further established his fame as a bacteriologist.

Between 1877 and 1897, most of the microbial causes of human and animal diseases were revealed for the first time. The questions concerning the mechanisms of microbial action, the production of bacterial infection, and its prevention and treatment were studied largely by Pasteur and his co-workers Roux, Metchnikoff, Borrel, Calmette and Yersin. These problems included the resistance and susceptibility to infection and modification of living organisms. Their investigations led to Jennerian vaccination and the use of vaccines prepared from attenuated strains of the causative microorganisms.

Of greatest import were the results of Pasteur's work on chicken cholera, anthrax, swine erysipelas and rabies that led to the development of immunology and thus had a practical impact on the scientific public health programs at the beginning of the twentieth century.

Of fundamental importance was the demonstration by Roux and Yersin of a specific toxin produced by the diphtheria bacillus in 1887. This formed the basis of the work of von Behring in producing artificial immunity in animals by injecting increasing doses of the toxin, and demonstrating diphtheria antitoxin in the blood serum, which has preventive and curative value. In 1894, Roux produced diphtheria antitoxin on a large scale by immunizing horses.

The development of certain diagnostic tests such as the Widal agglutination test in typhoid fever, the Wassermann test for syphilis, the Schick test for diphtheria and the tuberculin test for tuberculosis were of great importance in the diagnosis and control of those diseases.

The human carrier problem was recognized during this period, and the role of vectors in the spread of infectious diseases was established by various investigators. Ross and Manson traced malaria to the mosquito, and Finley traced yellow fever to the same insect group. Ricketts found that the tick spreads Rocky Mountain spotted fever; Nicholle discovered that the louse carries typhus fever; and Bancroft *et al.* established the responsibility of filaria for several diseases.

The first bacteriological laboratory in the United States was established in New York City in 1892, and similar laboratories were set up in other parts of the country shortly afterward.* These were of great service in the diagnosis and control of infectious diseases at the community level. Mass protective immunization against diphtheria and typhoid fever was very effective.

The economic and social trends in a changing society with the advance in industrialization and the expansion of urban communities distinctly influenced the general aspects of public health programs. There was increasing concern regarding the welfare of mothers and children, and federal recognition was accorded to child health in the establishment of the U. S. Children's Bureau, in 1912.

The establishment, after 1870, of the American Public Health Association and state boards or departments of health distinctly advanced public health service. The establishment of the World Health Organization in 1948 recognized public health as a world problem. Voluntary organizations such as the National Tuberculosis Association and the Social Hygiene Association, by directing special attention to tuberculosis and venereal disease, enlisted strong public support for the control of those two disabling conditions.

Health education became a special endeavor. Departments of preventive medicine and public health were added to all approved medical schools. The establishment of 11 schools of public health in the United States and Canada, with courses leading to graduate degrees, has promoted special leadership in the different fields of public health.

Of special meaning to public health physicians was the organization of the American Board of Preventive Medicine and Public Health in 1948, under the sponsorship of the APHA, the AMA, the Schools of Public Health, and the Canadian Public Health Association. Its purposes are the certification of physicians qualified by examination, special graduate training and experience for the specialty of public health practice.

In this first comprehensive study of the development of public health work, Dr. Rosen concludes by presenting a long discussion and careful description of the development of medical care plans and the different forms of health insurance in the United States and other countries. It is evident that he is a proponent of compulsory health insurance, for he devotes considerable space to it.

The book demonstrates clearly that progress in

medicine and public health has had an ever-present share in shaping the course of civilization. In it, the men who pioneered at the various stages of its evolution from primitive and ritualistic practices to the science of today each stands revealed.

It will be of special interest to the physician, the sociologist and the worker in allied fields.—Walter L. Bierring, M.D.

MODERN CHEMOTHERAPY OF TUBERCULOSIS (ANTIBIOTICS MONOGRAPHS No. 11), by Roger S. Mitchell, M.D., and J. Carroll Bell, M.D. (New York City, Medical Encyclopedia, Inc., 1958. \$4.00).

Medical treatment of tuberculosis extends far beyond the hospital phase. As more patients come under the observation of their family physicians and internists, need arises for a concise, readable treatise on treatment. ANTIBIOTICS MONOGRAPHS No. 11 admirably meets this requirement.

In a small volume, with a text only 80 pages long, Drs. Mitchell and Bell have compressed abundant technical information into a readable account of current ideas. Just two chapters—No. 7 "Modern Chemotherapy of Tuberculosis" and No. 5 "Regimens," read in that order—would provide an adequate working basis for treatment.

Other brief chapters on pharmacology, modes of action, dosage and drug resistance yield information of more technical character, presented in neat, comprehensible form. Numerous figures and well-thought-out tables bring data into focus.

References to some 500 original articles and an index complete the volume.

In addition to the commonly-accepted practice, the authors present their own individual recommendations on management. These will harry the "expert" rather than the larger group of physicians to whom the monograph is directed.—Leon Galinsky, M.D.

EMERGENCY WAR SURGERY, NATO HANDBOOK, by the United States Department of Defense. (Washington, D. C., Government Printing Office, 1958. \$2.25).

The NATO HANDBOOK is a very carefully written and comprehensive work on emergency war surgery. It is extremely well organized and has a very fine index, so that ready reference to any subject is available. It is very handy, for it is made to fit into a coat pocket, yet is so concise that it covers all of its subjects extremely well and in a very practical way.

For each type of injury, it follows the patient from the time of injury on the battlefield until he is back to the general hospital, where the definitive work can be completed. The priorities and problems concerning evacuation of the injured are carefully considered.

The chapters dealing with shock are especially commendable for their description of the condition and for the concise and exact presentation of the components and the amount of replacement therapy indicated in special circumstances.

Each chapter ends with a description of how to care for the particular injury in case of mass casualties. For this reason, it should be an invaluable reference book for all doctors who are concerned or will

* The Bacteriological Laboratory of the Iowa State Board of Health was established at the State University of Iowa, in Iowa City, in 1903.

be concerned with Civilian Defense.—C. O. Adams, M.D.

TREATMENT IN INTERNAL MEDICINE, by *Harold Thomas Hyman*, M.D. (Philadelphia, J. B. Lippincott Company, 1958. \$12.50).

This book can best be described as a very unusual and different book in its field. The text is unusually well organized and well written, and it covers well the gamut of diseases and syndromes encountered most frequently by the internist and generalist.

Background material and diagnostic criteria are covered for most of the entities presented. Sometimes in the interests of brevity the material is presented in almost telegraphic style. References for diagnostic criteria and therapeutics are included in the section on each disease entity and are unusually liberal. They are drawn from works of those usually considered to be authorities in their respective areas.

One gets the impression that this book is much more complete, informative and helpful than the average "treatment text" available today.

The book should prove a very handy and useful guide to therapy for those working in this field.—*Samuel J. Zoeckler*, M.D.

DISEASES OF THE NERVOUS SYSTEM DESCRIBED FOR PRACTITIONERS AND STUDENTS, NINTH EDITION, by *Sir Francis Walshe*, M.D. (Baltimore, The Williams & Wilkins Company, 1958. \$8.00).

The first edition of this text was published in 1940, and this present version thus attests to 18 years of continued popularity. The book is divided into two parts: Part I. General Principles of Neurological Diagnosis; and Part II. Descriptive Account of the More Common Diseases of the Nervous System. The second part includes chapters on space-occupying intracranial lesions, vascular disorders of the brain, epilepsy, migraine, acute infections, syphilis, multiple sclerosis, vitamin deficiency, liver disease, Wilson's disease, Parkinson's disease, Sydenham's chorea, injuries of the brain and spinal cord, Friedreich's disease, the muscular atrophies, myasthenia gravis, neuritis, plumbism, cranial nerve affections, lumbar disc protrusion and spinal nerve affections, among others.

The English "school" of neurology, of which this book is a worthy product, is noted for its clarity of description and elegance of style. In the preface to this current edition, the author states that many advances in neurology are owed to the neurosurgeon (among others). It is unfortunate that this "debt" is so largely ignored in the ensuing portions of the book. For example, in the discussion of the treatment of hydrocephalus, the extreme statement is made that no success has so far attended surgical efforts to re-establish a free cerebrospinal fluid circulation, and that hydrocephalus remains an incurable condition.

In spite of specific deficiencies and distortions, the text in general is accurate and worthwhile. There are 60 illustrations (mostly non-glossy) and 373 pages, and the volume is available at \$8.00, a price that appears reasonable enough during these inflationary times. Thus, for those who desire a well-written neurological text at a reasonable price, DISEASES OF THE NERVOUS SYSTEM, NINTH EDITION is qualifiedly recommended.—*John T. Bakody*, M.D.

BREAST CANCER, THE SECOND BIENNIAL LOUISIANA CANCER CONFERENCE, ed. by *Albert Segaloff*, M.D. (St. Louis, The C. V. Mosby Company, 1958. \$5.00).

This volume appears at a time when the subject it encompasses is in the front of every surgeon's mind. The problem of breast cancer is indeed a perplexing one, especially today when the hitherto accepted mode of treatment has been severely challenged in an attempt to improve the survival rate of the individuals whom the disease has afflicted.

Brought together in a clinical cancer conference, many of the authorities in this field have put forth the results of their research and clinical experience. Although they arrive at no conclusions regarding the present controversy, all aspects of the problem, from the epidemiologic picture to the terminal care of such patients, have been concisely recorded. The reports are highlighted and enlivened by transcriptions of the open discussions that took place following each major subdivision of the conference. This is a valuable portion of the book, for it presents to the reader the practical aspects of breast-cancer therapy.

For an up-to-date discussion and evaluation of this timely subject, this book is of great value to the practicing physician and surgeon.—*James M. Head*, M.D.

A HISTORY OF THE DEPARTMENT OF INTERNAL MEDICINE, STATE UNIVERSITY OF IOWA COLLEGE OF MEDICINE, 1870-1958, by *Walter L. Bierring*, M.D., with an introduction by *William B. Bean*, M.D. (Iowa City, State University of Iowa, 1958).

The story of the inception and continuing growth of the Department of Internal Medicine at the State University of Iowa is threaded through a series of brief biographies. Although short, the biographies are very fine. A measure of the inspiration in the lives of each of the pioneer leaders and teachers comes clearly to the reader. Dr. Bierring's affectionate and grateful interest in its founders carries on to the present builders of this fine institution. He brings the reader to share his pride in the progress of the past and his faith in the future of medical teaching. A brief, very appropriate foreword by Dr. Bean adds to the enjoyment of this volume.—*Diedrich J. Haines*, M.D.

STAPHYLOCOCCAL INFECTIONS, by *Ian Maclean Smith*, M.D. (Chicago, The Year Book Publishers, Inc., 1958. \$4.25).

This timely manual is divided into several distinct sections: (a) basic bacteriological principles of Staphylococci; (b) staphylococcal infections of the various organ systems in human beings; (c) staphylococcal infections in other animals; and (d) principles of treatment.

The author is well qualified to compile this handbook, for he is chief of the Infectious Disease Division of the S.U.I. Department of Internal Medicine. He has done a noteworthy job.

As the author points out, this is not a reference book. It should serve as a useful clinical manual and guide in the identification, control and treatment of staphylococcal infections, and it may well serve as a manual for use by hospital committees on infectious disease control.—*Marion E. Alberts*, M.D.



Iowa Academy of General Practice

FOURTH ANNUAL REFRESHER COURSE FOR GENERAL PRACTITIONERS

The GP's Refresher Course presented annually by the S.U.I. College of Medicine needs no introduction. Year after year, it has been received with ever greater enthusiasm by those in attendance. The program for the 1959 course has been prepared in accord with the response to a questionnaire that was mailed to physicians immediately following the 1958 course. The dates are February 17, 18, 19 and 20.

IAGP members who attend the entire course will be entitled to receive 36 hours of Category I credit, and hour-for-hour credit will be accorded members who attend only a part of it. The registration for Academy members will be \$5.00, and the registration fee for non-members will be announced later.

Special note is called to the Annual Banquet, to be held on Thursday at 6:30 p.m., at the Mayflower Inn, in Iowa City. Again the Iowa Chapter of the American Academy of General Practice will be host to the senior medical students at S.U.I. Preceding the dinner, there will be a social hour presented through the courtesy of Marion Laboratories, of Kansas City, which will be highlighted by their famous oysters on the half-shell and beer.

Dr. W. C. Keettel, director of postgraduate studies at the S.U.I. College of Medicine, has been most fortunate in securing Dr. Kenneth McFarland, educational consultant for General Motors, as the banquet speaker. Dr. McFarland gained national prominence as a school executive, and his widespread interests make him at home in a great variety of groups. He has been named "America's Number One Speaker" by the U. S. Chamber of Commerce.

Tuesday, February 17 *Surgery*

- 9:00 a.m. "Appendicitis"—Dr. Robert Hickey
- 9:30 "Office Proctology"—Dr. William Bernstein
- 10:10 "Emergency Management of Burns"—Dr. S. E. Ziffren
- 10:45 "Evaluation of Newer Drugs in Surgery"—Dr. R. T. Tidrick
- 11:15 "Fractures of the Elbow"—Dr. I. V. Ponseti
- 11:45 QUESTION AND ANSWER PERIOD

1:30 p.m. SMALL GROUP CONFERENCES

- "Cast and Dressing Demonstration"—Dr. Tidrick
- "Fluid Balance Problems"—Dr. E. E. Mason
- "Postoperative Abdominal Distention"—Dr. J. A. Gius
- "Ward Rounds on Surgery"—Dr. Ziffren
- "Neurologic Examination"—Dr. R. A. Utterback
- "Hernia"—Dr. J. A. Buckwalter
- "Office Urology"—Dr. R. Flocks
- X-ray Conference, Fractures—Dr. C. L. Gillies
- "Injuries of Fingers and Nails"—Dr. A. F. Flatt
- 2:30 "Fistula in Ano"—Dr. Bernstein
- 3:00 "Hematuria"—Dr. Flocks
- 3:45 PANEL DISCUSSION: CAUSES OF JAUNDICE—Dr. J. A. Clifton, Dr. J. R. Carter and Dr. Gius

4:30 QUESTION AND ANSWER PERIOD

Wednesday, February 18 *Pediatrics*

- 9:00 a.m. "Management of Diabetes in Children"—Dr. C. H. Read
- 9:30 "Management of Nephritis and Nephrosis in Children"—Dr. W. W. McCrory
- 10:00 "Histoplasmosis in the Mississippi Valley"—Dr. Amos Christie
- 10:45 "Review of Immunization Procedures in Children"—Dr. Madelene M. Donnelly and Dr. R. B. Kugel
- 11:15 DISCUSSION: INDICATIONS FOR TONSILLECTOMY—Dr. D. M. Lierle, Dr. Kugel and Dr. McCrory
- 12:00 m. QUESTION AND ANSWER PERIOD
- 1:30 p.m. SMALL GROUP CONFERENCES
 - "Office Dermatology"—Dr. C. E. Radcliffe
 - "Conjunctivitis"—Dr. P. J. Leinfelder
 - X-ray Conference, Chest Films—Dr. E. F. Van Epps
 - "Problems in Feeding and Management of the Newborn"—Dr. McCrory
 - "Fluid Therapy in Children"—Dr. S. J. Fomon
 - "Non-Tuberculous Diseases of the Chest in Children"—Dr. Christie
 - "Office Management of Common Behavior Problems"—Dr. J. C. MacQueen
 - "Newer Drugs in Pediatrics"—Dr. H. G. Cramblett
 - "Anemia in Infants and Children"—Dr. R. D. Gauchat
 - 2:30 "Leukemia in Children"—Dr. Cramblett



Dr. Kenneth McFarland, educational consultant for the General Motors Corporation and one of America's really superb speakers, will give the address at the banquet of the Refresher Course for General Practitioners.

- 3:00 "Common Pediatric Problems Which Regress or Take Care of Themselves If They Are Left Alone"—Dr. Christie
- 3:45 "The Significance of a Heart Murmur in the Young Child"—Dr. W. B. Anderson and Dr. E. O. Theilen
- 4:30 QUESTION AND ANSWER PERIOD

Thursday, February 19
Obstetrics and Gynecology

- 9:00 a.m. SYMPOSIUM ON TOXEMIA OF PREGNANCY
"Hypertensive Disease"—Dr. W. B. Goddard
"Preeclampsia"—Dr. Keettel
"Eclampsia"—Dr. J. H. Randall
"Nephritis"—Dr. C. P. Gopelrud
- 9:45 "Office Gynecology"—Dr. Robert A. Ross
- 10:45 "Care of Patient in the Delivery Room and During the Puerperium"—Dr. Randall
- 11:15 "Evaluation of Newer Drugs in Obstetrics and Gynecology"—Dr. Keettel
- 11:45 QUESTION AND ANSWER PERIOD
- 1:30 p.m. SMALL GROUP CONFERENCES
"Threatened Abortions"—Dr. Ross
"Pregnancy Tests"—Dr. James T. Bradbury
"Fractures of the Wrist"—Dr. M. Bonfiglio
Ward Rounds—Obstetrics—Dr. Keettel
"Obstetrical Anesthesia"—Dr. Randall
"Antepartum Bleeding"—Dr. Goddard

- "X-ray Pelvimetry"—Dr. Gopelrud
X-ray Conference, GI Series—Dr. H. W. Fischer
"Office Otolaryngology"—Dr. W. C. Huffman

- 2:30 "Ectopic Pregnancy"—Dr. Ross
- 3:00 "Painful Feet"—Dr. Carroll B. Larson
- 3:45 SYMPOSIUM ON PELVIC PAIN—Dr. A. S. Norris, Dr. G. R. Barnes, Dr. Goddard and Dr. Gopelrud
- 4:30 QUESTION AND ANSWER PERIOD
- 7:00 ANNUAL BANQUET

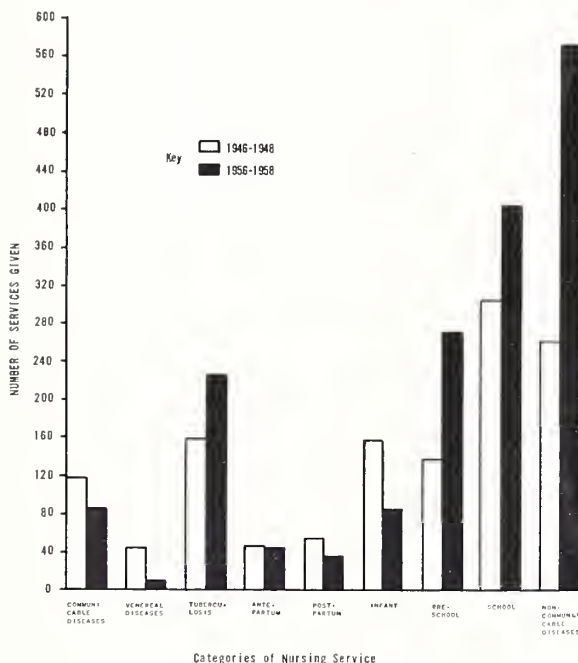
Friday, February 20
Medicine

- 9:00 a.m. "What Are Antibiotics?"—Dr. R. E. Kallio
- 9:20 "The Changing Bacterial Flora"—Dr. J. R. Porter
- 9:50 "Drug-resistant Infections"—Dr. Ian Smith
- 10:15 "New Infections in Iowa"—R. A. Tjalma, D.V.M.
- 10:45 "The Prophylaxis of Acute Rheumatic Fever"—Dr. Lewis January
- 11:00 SYMPOSIUM ON RHEUMATIC ARTHRITIS—Dr. E. L. DeGowin, moderator, and Dr. W. D. Paul, Dr. R. E. Hodges and Dr. Bonfiglio
- 12:00 m. QUESTION AND ANSWER PERIOD
- 1:30 p.m. SMALL GROUP CONFERENCES
"Cardiac Irregularities"—Dr. Theilen
"Diabetic Management"—Dr. R. C. Hardin
"Diarrhea in Adults"—Dr. N. M. Thornton
"Management of Leukemia"—Dr. W. M. Fowler
"Cardiac Failure"—Dr. W. M. Kirkendall
EKG Conference—Dr. January
X-ray Conference, Orthopedic X-rays—Dr. Gillies
"Allergy"—Dr. Paul M. Seebohm
"Hyperthyroidism"—Dr. DeGowin
- 2:30 "Recurrent Infections of the Kidney"—Dr. Kirkendall
- 3:00 "The Overuse of Antibiotics"—Dr. W. B. Bean
- 3:30 "The Treatment of Infections of the Eye"—Dr. A. E. Braley
- 4:00 SYMPOSIUM ON SPECIAL PROBLEMS OF ANTIBIOTIC THERAPY—Dr. Smith, moderator
Burns—Dr. Ziffren
Diabetes—Dr. Hardin
Dermatitis—Dr. R. G. Carney
Pulmonary—Dr. G. N. Bedell

STATE DEPARTMENT OF HEALTH

Edmund S. Finnes
COMMISSIONER

TRENDS IN PUBLIC HEALTH NURSING



The accompanying graph reflects in part the trends in public health nursing in Iowa that have resulted from population changes and from the advances made in the control of certain diseases.

The figures for the graph were obtained from the activity reports compiled monthly by the county public health nurses. In the biennium from July 1, 1946, to June 30, 1948, a total of 45,368 services were given by 35 nurses. The average number of services per nurse was 1,296. During the biennium from July 1, 1956, to June 30, 1958, a total of 85,700 services were rendered by 49 nurses. Thus the average number of services per nurse during the latter period was 1,749.

The graph depicts services according to conditions or age groups. It will be noted that in the 1956-58 biennium, the number of services for persons with non-communicable conditions was much greater than in the 1946-1948 period. The non-communicable disease category includes chronic

illnesses of adults (exclusive of tuberculosis), such as diabetes, arthritis, heart disease and cancer. Within the last decade, Iowa has had an increasing number of older citizens. According to the 1950 census, 10.4 per cent of our population was 65 years of age or older, and as of July 1, 1957, it was estimated that 11.4 per cent of Iowa's population was 65 years of age or older. The fact that nursing service has increased in the non-communicable disease category illustrates how health services are influenced by population changes and their resultant health problems.

It will be observed that the number of services to infants decreased in the 1956-1958 period as compared to the 1946-1948 biennium. In 1946 and 1947, the postwar increase in births was reaching its peak, and the Emergency Maternity and Infant Care Program was still in effect. This resulted in a larger number of referrals for public health nursing service of that sort. The increased birth rate has also resulted in an increased number of services to preschool children, as will be observed by comparing the two periods.

It should be noted that in the 1956-1958 period there was a decrease in all communicable disease services except tuberculosis. Advances in medicine, including the development of vaccines and specific medications, have probably influenced the need for services in that category.

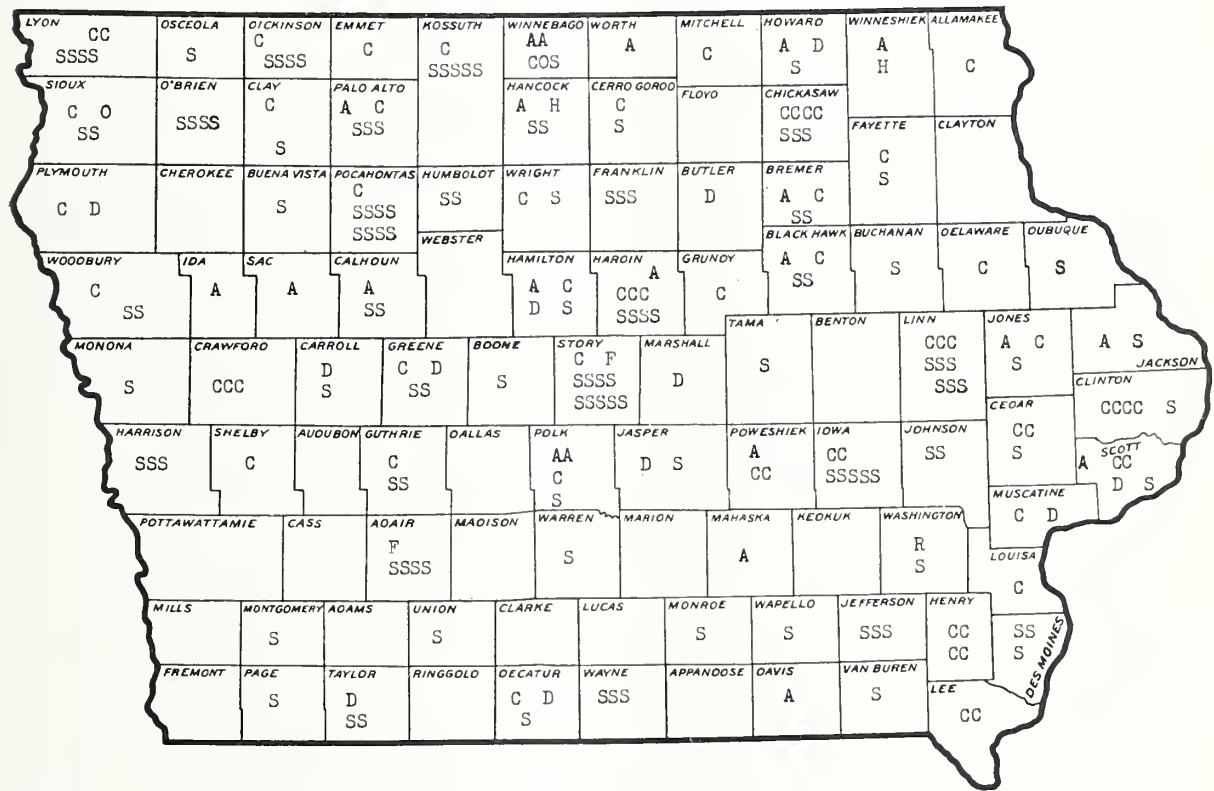
DISAPPOINTMENT WITH MITOMYCIN C

The Cancer Chemotherapy National Service Center, of U.S.P.H.S., reported on January 22 that Mitomycin C, an antibiotic that was said to have given promising results in cancer treatment in Japan, has frequently produced major toxic reactions but seldom objective improvement in U. S. clinical trials. So far, it has not replaced the standard chemotherapeutic agents in any form of cancer, the Center's announcement said.

Japanese experience in treating human cancer with Mitomycin C had been reported at a Symposium on Antibiotics held in Washington, D. C., on October 16, 1958, and a limited quantity was subsequently produced in this country for clinical trials at the Cancer Chemotherapy National Service Center.

MORBIDITY REPORT FOR MONTH OF DECEMBER, 1958					Disease	1958 Dec.	1958 Nov.	1957 Dec.	Most cases reported from these counties
Disease	1958 Dec.	1958 Nov.	1957 Dec.	Most cases reported from these counties	Psittacosis	1	0	0	Woodbury
Diphtheria	0	0	3		Q fever	0	0	0	
Scarlet fever	174	128	144	Johnson, Polk	Tuberculosis	33	52	30	For the state
Typhoid fever	1	0	0	Linn	Syphilis	90	85	96	For the state
Smallpox	0	0	0		Gonorrhea	82	75	51	For the state
Measles	1,630	574	41	Appanoose, Polk, Scott	Histoplasmosis (3 delayed cases)	6	0	0	Keokuk, Linn, Marion, Madison, Polk, Shelby
Whooping cough	13	13	11	Clinton, Dubuque, Greene	Food intoxication	0	0	0	
Brucellosis	17	9	8	Wapello, Winneshiek	Meningitis (type unspecified)	0	1	0	
Chickenpox	389	168	374	Clay, Scott, Polk	Diphtheria carrier	0	0	0	
Meningococcic meningitis	2	1	3	Polk, Woodbury	Aseptic meningitis	2	0	0	Hamilton, Polk
Mumps	362	171	292	Clay, Greene, Marion, Polk, Scott	Salmonellosis	6	2	0	Johnson, Polk
Poliomyelitis (3 delayed cases)	9	7	2	Benton, Black Hawk, Boone, Cerro Gordo, Fayette	Tetanus	0	0	0	
Infectious hepatitis	4	13	4	Dubuque, Linn, Shelby	Chancroid	0	0	0	
Rabies in animals	18	14	8	Clinton, Hancock, Hardin, O'Brien	Encephalitis (type unspecified)	2	3	0	Johnson, Pottawattamie
Malaria	0	0	0		H. influenza meningitis	1	1	1	Polk
					Amebiasis	0	1	5	
					Shigellosis	2	6	0	Polk
					Influenza	7	0	1,078	Polk

1958 CASES OF RABIES IN ANIMALS CONFIRMED BY LABORATORY EXAMINATION



Symbol	Number of Cases			Number of Cases	
S	Skunk	127	O	Horse	2
C	Cattle	62	R	Raccoon	1
A	Cat	23	H	Hog	1
D	Dog	12			
F	Fox	2			
Total					230

LEPTOSPIROSIS

The first recognized human case of leptospirosis in Iowa was reported in 1951.* The second case to be reported occurred in 1952. At that time, the widespread prevalence of leptospirosis in cattle and hogs was recognized.** It was emphasized that leptospirosis should be suspected in persons having an acute febrile disease when the patients have had contact with cattle or swine.

There are three types of leptospira infection that appear to be of primary importance. *L. canicola* is the type usually found in dogs; *L. icterohemorrhagiae* are found in rats; and *L. pomona* are found in cattle and hogs. All of them can and do cause human illness. Almost all of the human cases that have been reported in Iowa have been due to the cattle and hog type.

A summary of reported human cases in Iowa is as follows:

1951	1	1957	2
1953	1	1958	15
1955	1		

The marked increase in reported cases in 1958 was due to a specific study conducted by the S.U.I. Institute of Agricultural Medicine, in cooperation with the State Hygienic Laboratory and the State Department of Health. Serologic tests for leptospirosis were performed on specimens sent to the State Hygienic Laboratory for other reasons. The survey revealed positive titers for leptospirosis which, when evaluated along with clinical manifestations and epidemiologic data, resulted in physicians' diagnosing leptospirosis in persons previously not suspected of having the disease. Physicians thus alerted have observed and reported additional cases.

In animals, the disease is a herd problem. The signs and symptoms of it are quite variable, and may be mild or severe. One common symptom is premature birth of the young in both cattle and swine. There may be a sudden reduction of milk flow in dairy cows. The mammary secretion may be thick, yellowish and blood-tinged, but the udder does not appear inflamed. The disease can easily be confused with other cattle and swine diseases. Blood tests are usually necessary before the veterinarian can make a diagnosis.

The disease may spread to man by direct or indirect contact with the infected animals, since the organisms are shed in the urine of infected animals. Human cases are most likely to occur among groups of persons who have repeated, close contacts with livestock—namely, veterinarians, farmers and packing-house workers. The disease in man may mimic other diseases. Fever, chills, sweats, muscular pains, headache, fatigue and

malaise are common. The physician usually requires blood tests to aid him in making a diagnosis.



OBJECTIVES OF THE IOWA MENTAL HEALTH PROGRAM

JAMES O. CROMWELL, M.D.
DES MOINES

The State of Iowa traditionally has assumed two principal roles concerned with the mental health of its citizens:

1. The education and training of professional mental health personnel in our schools and colleges

2. The care of the mentally ill persons who are financially unable to afford private care and treatment in our mental institutions.

Cognizant of these traditional roles, the Division of Mental Health of the State Board of Control undertakes the following objectives:

A. To improve the quality of the existing state institutions for the mentally ill to the point at which they fully meet the requirements of the various professional organizations which recommend standards for such mental institutions—with the purpose of rendering better service to the patients who enter such institutions, and of implementing the objectives of education, training and research.

B. To expand and strengthen the liaison with the University of Iowa Medical School and The Psychopathic Hospital in the education and training of mental health personnel until the numbers trained each year are adequate to meet the demands for mental health services to the people of Iowa and to carry forward a sound research program.

C. To encourage a sufficient number of psychiatrists, backed up by the necessary auxiliary personnel, who have received their training in our approved training centers or in approved training centers of other states, to enter into the private practice of psychiatry in communities throughout the state, so that such private practitioners can adequately provide professional services and treatment for the mentally ill within each community, with the end in view of eventually reducing the services available to patients at tax expense, aiming to provide them only for that minimum of mental health service needed to insure facilities for the continuance of our education and training program, so that an adequate supply of well trained private practitioners and auxiliary professional personnel is perpetually insured.

*Larson, E.: Leptospirosis due to *Leptospira pomona*; report of first case in Iowa and review of literature. *J. Iowa M. Soc.*, 43:178-181, (May) 1953.

**Heeren, R. H., Evans, R. E., and Hendricks, S. L.: *Leptospira pomona* infection in man and animals in Iowa. *J. Iowa M. Soc.*, 44:285-289, (July) 1954.

THE DOCTOR'S BUSINESS

Life Insurance Settlement Options

HOWARD D. BAKER

WATERLOO



When one purchases life insurance, he should be careful not only to choose a strong company and to select the appropriate type of contract, but also to give some thought to the optional methods of settlement. Following is a brief summary of the various options available in most policies today. Proper selection of option is almost as important as having an adequate amount of insurance.

The Lump Sum Option. This is self-explanatory. It should be used primarily to provide needed cash immediately, when this cash is not available from other sources.

The Interest Option. Under this arrangement, the company retains the proceeds and pays a stipulated rate of interest on them. Usually, the right to withdraw the proceeds, in part or in total, is vested in the beneficiary. This option is the proper choice when income, or cash, is not needed immediately but will be later. Another option can be substituted for this one at a stipulated time or at the beneficiary's discretion.

Income for a Fixed Period. This pays income for a predetermined and fixed period. The amount of income is governed by the period elected and by the proceeds available. The most common use for this option is to provide a monthly income for the widow during the dependency period of the children.

Income of a Fixed Amount. This option provides for the payment of a fixed amount at regular intervals until the proceeds of the policy have been exhausted. The number of installments is governed by the size of the sum in the company's hands and by the rate which it has been stipulated the company is to pay upon the progressively reduced balance. This arrangement is most commonly used when the size of the payments will be more important than the period over which they are paid.

The Life-Income Option. This option provides a constant income to the beneficiary for as long as

he or she may live. Some modifications of this arrangement are available; for example, instead of providing that payments shall cease abruptly upon the death of the beneficiary, the terms can call for five, 10 or 20 years certain. Then, if the first beneficiary dies before the stipulated number of payments have been made, the residual legatees inherit the remainder.

Provided that individual payments can be no less than a stated minimum, the income under any of these options may be paid annually, semi-annually, quarterly or monthly.

COMBINATIONS OF OPTIONS

In addition to the standard options that have been described, nearly any combination of them can be arranged. For example, on a \$12,000 policy it would be possible to arrange that \$2,000 of the proceeds be paid in cash; \$5,000 be retained at interest until a stated date and then paid as a life income with payments guaranteed for five years; \$2,000 be paid out in installments for a fixed period of five years; \$1,000 be paid out at the rate of \$50 per month until exhausted; and the remaining \$2,000 be paid as a life income with payments guaranteed for 20 years. This example illustrates the use of six options in one policy, and though such a settlement would be an uncommon one, it demonstrates the flexibility of planning that is available.

Settlement options which best fit your individual program should be utilized. These options are necessarily subject to change with your needs. Your choice must be governed by family needs, by your beneficiaries' ages and also by your general estate plan provisions. Consequently, your insurance counselor and your attorney should both review your options in order to assure the accomplishment of your goals without adverse effect to your estate plan.



Woman's Auxiliary News



OUR PRESIDENT SAYS—

The month of February is highlighted by the birthdays of two Americans, Abraham Lincoln and George Washington, and annually, we retell the half-truth, half-fiction stories about these famous men who charted the course of our nation in times of trouble. Also, symbols of hearts and flowers appear everywhere, reminding us to follow the example of St. Valentine and show our love to those we hold dear.

For those of us who are engaged in numerous activities, time passes all too quickly, and we are suddenly faced with deadlines for the completion of our various projects. Our consequent last-minute rush makes our work seem burdensome and destroys some of the satisfaction we might have taken in jobs really carefully done.

We Auxiliary members must keep abreast of the schedules we have set for ourselves, and we must remember to keep our plans flexible, so that we can accept any new projects that are assigned to us and complete them with dispatch and aplomb. We are an Auxiliary to the Medical Society, and must stand ready to work for it at a moment's notice.

As we enter the last few months of our Auxiliary year, it is time for us to take stock of ourselves, to see whether we have done what we set out to do. The officers who have directed the work of county and state Auxiliaries since last spring are already able to see the success of the members' activities. The county officers who have been chosen for next year are already making their plans. Our annual reports are the measuring sticks we use in finally evaluating the year's accomplishments, and you will receive further word about those reports soon.

Plans are now being made for the Auxiliary's annual meeting to be held in Des Moines April 20-21. I know every doctor's wife will enjoy meeting her friends there and participating in the social and business sessions of our organization. Next month, the complete program for that meeting will appear in the WOMAN'S AUXILIARY NEWS.

May I remind you that one of our spring activities is the celebration of Doctor's Day on March 20? Plan to present each doctor in your medical society with a red carnation on that day as a gesture of appreciation for his devotion to humanity. If doctors' wives set an example, the rest of your community will follow.

Take an interest and gather information regarding the bills pertaining to medicine that are before our legislators both at the state and at the national level. Read the bulletins sent to you by the ISMS Committee on Legislation and by the State Auxiliary so that you will know what position organized medicine has decided to take regarding each of them.

Do you know a woman in your community other than a doctor's wife or a paid health worker who has done or who is doing some outstanding work in the health field? If so, submit her name and a review of her accomplishments so that she may be considered for the Community Service Award that is presented each year at the State Auxiliary's annual meeting.

Every Auxiliary is concerned about membership. In order to expand our activities and improve our service to organized medicine, we must increase our membership. But as we add new members, we must not lose sight of the fact that we cannot afford to lose old members! Thus, our programs must be kept varied enough to hold the interest of all doctors' wives.

Every physician's wife is needed as an Auxiliary member, and every physician's wife is wanted!

—MRS. H. C. MERILLAT

DON'T BE HASTY

In our enthusiasm for a new proposal, we must not lose sight of the fact that we must obtain permission from the president of the local medical society or from that society's advisory council before embarking upon any new project. Auxiliaries on national, state and county levels may engage in community activities or sponsor speakers only upon the recommendation or with the approval of the AMA, the State Medical Society or the county medical society.

DUE\$ are DUE

Pay your due\$ early in the Auxiliary year. Your Auxiliary's activities depend on these funds.

Make your treasurer a Due\$-Receiver, not a Due\$-Collector.

COUNTY AUXILIARIES

Black Hawk

At the Elks Club in Waterloo, on January 31, the Black Hawk County Medical Society conducted a benefit ball, proceeds of which are to go to the County Mental Health Center.

Mrs. C. J. Ludwig and Mrs. William Telfer served as general chairmen; Mrs. Andrew Smith was ticket chairman; Mrs. Vernon Plager was music chairman; Mrs. James Jeffries was in charge of publicity; and Mrs. Louis Winniger was entertainment chairman. Mrs. Thomas Board assisted Mrs. Smith, and Mrs. Art Devine assisted Mrs. Winniger.

Polk

Mrs. Allan B. Phillips entertained the members of the board of the Polk County Medical Auxiliary at coffee recently in her home at 5105 Waterbury Road, Des Moines. Dr. Noble Irving addressed them.

Chairmen and members of committees of the chapter met at the ISMS office building to plan for a tea to be given for wives of Iowa legislators on January 29 at the Des Moines Art Center.

AUXILIARY HISTORIES

Mrs. Charles H. Flynn, of Clarinda, a past-president of the State Auxiliary and currently the AMA Auxiliary program chairman, is chairman of the State Auxiliary History Committee. Please help your local president compile a history of your county Auxiliary and send it to her. If the records of your chapter are incomplete, it will take the help of each and every member to complete this project.

COMMUNITY HEALTH SERVICE AWARD

Each Auxiliary member is encouraged to consider making a nomination for the Community Health Service Award that is presented each year at the annual meeting of the State Auxiliary. Mrs. Ralph Moe, of Griswold, will be glad to send information or answer questions regarding it.

Each nominee must qualify as a volunteer worker, and should be someone who deserves recognition

for her interest and activity either in health or in health education here in Iowa. A physician's wife or other Auxiliary member, or a paid health worker is ineligible.

Additional information will be mailed to organized Auxiliaries and members-at-large during February.

MENTAL HEALTH PROJECT

Over the past several years, the Woman's Auxiliary has become increasingly active in the field of mental health. Upon the suggestion of the ISMS Mental Health Committee, it has undertaken the distribution of "Milestones to Marriage," a series of nine monthly letters to high school students concerning family and community-life problems. Teachers and church leaders have used this material as starting-points for highly worthwhile instruction and discussions, and they are highly enthusiastic about them.

Because of our success with this project, the ISMS Mental Health Committee has asked the Auxiliary to consider undertaking another project in this field. We have been asked to take an interest in the psychiatric patients who are being released from the larger institutions and who are living in county homes or in nursing homes in their local communities. Personal contacts with these "forgotten people" could definitely assist them in again becoming parts of their communities, and we might well develop a program designed to help in their rehabilitation. In the hospitals from which they have come and in the county or nursing homes where they are now living, they have lacked the small personal attentions which we might provide. This volunteer service has been offered by individuals and organizations elsewhere and has proved highly worthwhile.

The ISMS Mental Health Committee will be pleased to help us develop such a program.

Mrs. William B. Chase, Jr., the chairman of the State Auxiliary's Committee on Mental Health, presented this project to the county presidents and members-at-large in a letter she wrote them in November, and when she has received replies from all of the counties, further plans will be formulated. It is hoped that county presidents will present this project to their groups and encourage all members to help with it, but before setting it in motion they should be sure to consult their county medical society officers and their county welfare officials. It is essential that our efforts be coordinated with theirs, and they may have some helpful suggestions to offer.

WOMAN'S AUXILIARY TO THE IOWA STATE MEDICAL SOCIETY

President—Mrs. H. C. Merillat, 116 Lincoln Place Drive, Des Moines 12

President-Elect—Mrs. E. A. Larsen, Centerville

Secretary—Mrs. Wm. C. Shinkle, 307 49th St., Des Moines 12

Treasurer—Mrs. E. A. Vorisek, 6205 Woodland Rd., Des Moines 12

Editor of THE NEWS—Mrs. E. T. Burke, 601 S.W. 42nd Street, Des Moines 12

Asst. Editor of THE NEWS—Mrs. D. F. Crowley, Jr., 663 44th Street, Des Moines 12

Case Studies



TROUBLE WITH TOLBUTAMIDE IN AN "IDEAL" PATIENT

ROBERT E. GRIFFIN, M.D.

SHELDON

In January of this year, three members of the faculty at the Marquette University School of Medicine reported two instances of difficulty with tolbutamide that had been encountered by diabetic patients of the group supposedly best suited for such therapy—elderly patients controlled on low insulin dosage.* The following, unless I am mistaken, is the first like situation that has arisen in the northwest corner of Iowa.

CASE REPORT

A 68-year-old woman had had diabetes for about 18 years, and her case had been well controlled on between 16 and 20 units of NPH insulin for several years, but because tolbutamide therapy is a pleasanter means of keeping the disease in check, I suggested that she change to the newer method.

The patient had been moderately hypertensive for years, and about 18 months before being started on tolbutamide, she had had a bout of rather severe cardiac decompensation. After recovery, she had remained compensated on a daily dose of 0.1 mg. of digitoxin, and for six months had required no diuretics.

On December 26, following instructions, she took six tablets of tolbutamide in divided doses and an injection of 14 units of NPH insulin. On December 27, she took 10 units of insulin and four tablets of tolbutamide, two tablets b.i.d. On December 28, she took eight units of insulin and two tablets of tolbutamide. Then on December 29, she took two tablets of tolbutamide and no insulin. That evening she felt ill and vomited once. Her urine test showed sugar for the first time in weeks—4+.

The patient's sister, who called me the next morning, said that the urine tests had shown 4+ sugar constantly since the previous evening. The patient, her sister said, seemed quite ill, had had four or five spells of "stiffening all over and passing out" since midnight, and still could not keep anything on her stomach and seemed to breathe hard.

The sister was instructed to give the patient 20 units of regular and 20 units of NPH insulin immediately, and when I arrived an hour later, the

patient was sitting in a chair and was able to communicate rationally, though in obvious acidosis. She was then taken to the hospital.

On admission, the patient's urine showed 4+ sugar and 4+ acetone, and 50 units of regular insulin were given immediately. A blood sugar taken within 30 minutes showed 480 mg. per cent. During the day, intravenous feedings of glucose-free fluids totaling 3,000 cc. were given. She also received a total of 375 units of insulin before late afternoon, when the urine from an indwelling catheter first showed less than 4+ sugar. During the remainder of her hospital stay, repeated examinations, routine laboratory work, EKG and chest x-ray showed no new pathology. The patient continued to recover, and within a few days was back at home.

Needless to say, she now takes her insulin regularly and is quite satisfied to control her diabetes in the "old-fashioned way." As a matter of fact, she had been satisfied at the beginning, and I should have been.

Thus, as this experience shows, tolbutamide is not without dangers, even in the so-called ideal patient.

CLINICAL CONFERENCE OF CHICAGO MEDICAL SOCIETY

The Annual Clinical Conference of the Chicago Medical Society will be held at the Palmer House on March 2, 3, 4 and 5, 1959.

A faculty of outstanding speakers will present 33 half-hour lectures on subjects of interest to the general practitioner and the specialist. Panels on timely topics, a clinical pathologic conference and medical color telecasts are on the program. Teaching demonstration and instructional courses will be presented to small groups to encourage a close relation between the instructor and the physician. Scientific and technical exhibits will be on display.

The instructional courses are an innovation. The four of them will meet each day, with "Problems in Surgery" at 9 and "Problems in Medicine" at 11 in the morning, and "Problems in Obstetrics and Gynecology" at 1:30 and "Problems in Allergy" at 4 in the afternoon. Each class will be limited to 20 physicians, and registration must be made in advance. The fee for each course is \$5.

For further information, address the Chicago Medical Society, 86 East Randolph Street, Chicago 1.

* Engstrom, W. W., Ruwaldt, M. M., and Engbring, N. H.: Diabetic acidosis as complication of therapy with tolbutamide. *CP*, 96-98, Jan., 1958.

IOWA STATE MEDICAL SOCIETY

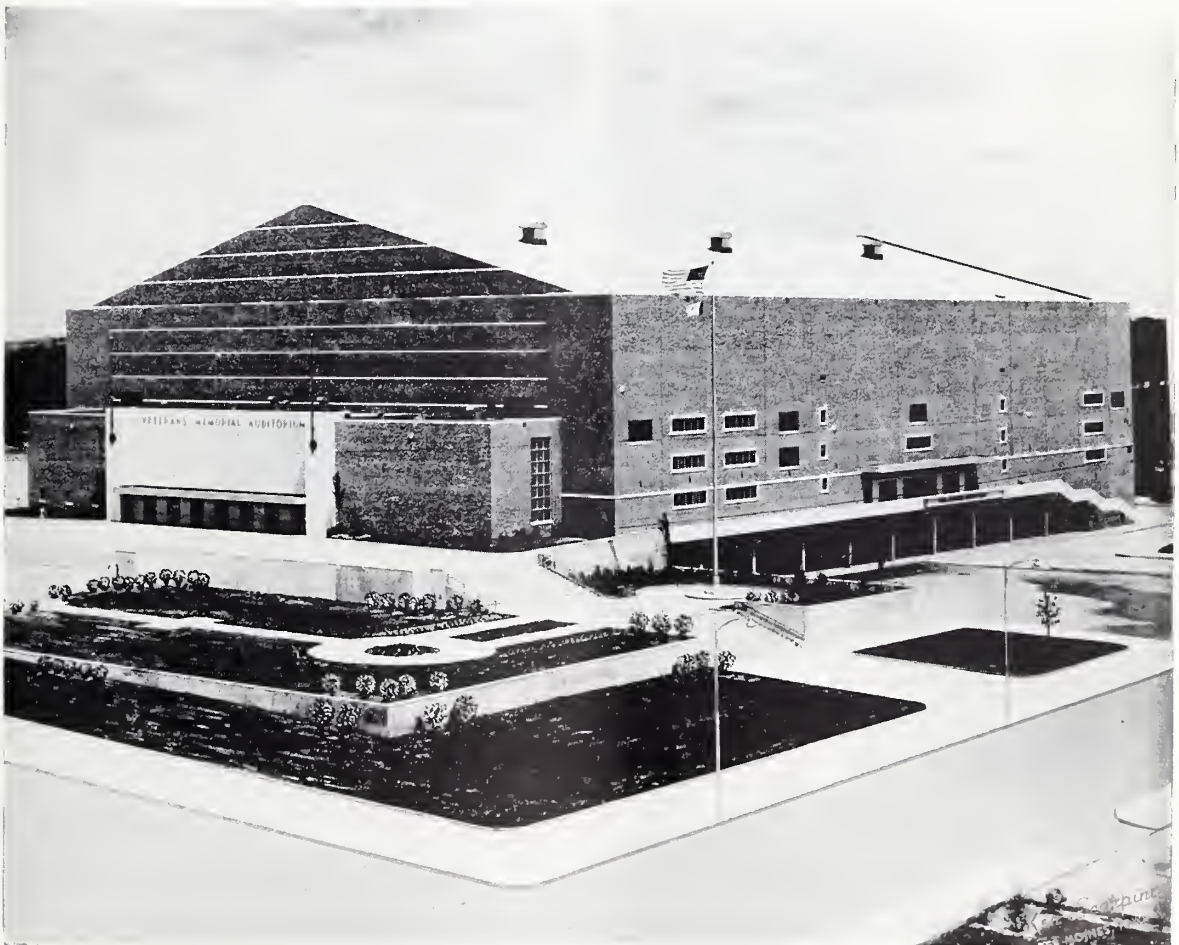
Organized in 1850

1959 ANNUAL MEETING

April 19-22

Veterans Memorial Auditorium

Des Moines



Veterans Memorial Auditorium



WALTER D. ABBOTT, M.D.

President

Iowa State Medical Society

1958-1959

General Sessions

General Sessions Room, Exhibit Hall

Monday Morning, April 20

8:00 EXHIBITS

9:30 Invocation

REV. GERALD G. WALKER, pastor, St. Augustine Church, Des Moines

Address of Welcome

BERNARD C. BARNES, M.D., Des Moines,
President of the Polk County Medical Society

Response

H. E. FARNSWORTH, M.D., Storm Lake,
Vice-President of the Iowa State Medical Society

9:45 President's Address

WALTER D. ABBOTT, M.D., Des Moines,
President of the Iowa State Medical Society

10:00 GEORGE C. MORRIS, JR., M.D., Houston, Texas

"ANEURYSMS AND OCCLUSIVE DISEASE OF THE
AORTA AND PERIPHERAL ARTERIES: EXPERIENCE WITH 2,000 CASES"

10:30 RECESS TO VISIT EXHIBITS

11:15 SYMPOSIUM—EXFOLIATIVE CYTOLOGY

HAROLD W. MORGAN, M.D., Mason City,
Iowa, *Moderator*

The scientific program will be acceptable to the American Academy of General Practice for 12 hours of Category II credit.

ROGER B. SCOTT, M.D., Cleveland, Ohio,
Gynecology

JOHN FATLAND, M.D., Iowa City, Iowa,
Urology

KENNETH R. CROSS, M.D., Iowa City, Iowa,
Pathology

MERLE J. BROWN, M.D., Davenport, Iowa,
Surgery

F. JOHNSON PUTNEY, M.D., Philadelphia, Pa.,
Ear, Nose & Throat

Monday Afternoon, April 20

12:15 LUNCH

2:00 ROGER B. SCOTT, M.D., Cleveland, Ohio
"THE GROWTH PATTERN OF ENDOMETRIOSIS"

2:30 F. JOHNSON PUTNEY, M.D., Philadelphia, Pa.
"RESPIRATORY OBSTRUCTION IN INFANTS"

3:00 RECESS TO VISIT EXHIBITS

3:45 ROBERT LICH, JR., M.D., Louisville, Kentucky
"PEDIATRIC UROLOGY"

4:15 PATRICK A. ONGLEY, M.D., Rochester, Minnesota

"THE ROLE OF THE FAMILY PHYSICIAN IN CONGENITAL HEART DISEASE"

4:45 REYNOLD A. JENSEN, M.D., Minneapolis, Minnesota

"CHILD PSYCHIATRY FOR THE GENERAL PRACTITIONER"



Mansour F. Armaly, M.D., of Iowa City (left), is a research assistant professor in the Department of Ophthalmology at the S.U.I. College of Medicine. Winchell M. Craig, M.D., of Rochester, Minnesota (center), is emeritus professor of neurologic surgery, Mayo Foundation, Graduate School of the University of Minnesota. Gunnar Gundersen, M.D., of LaCrosse, Wisconsin (right), is president of the American Medical Association.



Frank R. Hendrickson, M.D., of Chicago (left), is a member of the staff in radiation therapy at Presbyterian-St. Luke's Hospital, and clinical assistant in the Department of Radiology at the University of Illinois College of Medicine. Reynold A. Jensen, M.D., of Minneapolis (center), is a professor in the Department of Psychiatry and Pediatrics at the University of Minnesota Medical School, and director of the Division of Child Psychiatry and Children's Psychiatric Hospital at the University of Minnesota Hospitals. Mr. Lloyd Karr, of Webster City (right), is an attorney at law, a member of the Board of Governors of the Iowa State Bar Association, and chairman of the Public Relations Committee and a past-president of the Hamilton County Bar Association.

General Sessions (Continued)

Tuesday Morning, April 21

8:00 EXHIBITS

9:00 RALPH M. KNISELEY, M.D., Castro Valley, California

"IMPORTANT NON-BIOLOGICAL CONTRIBUTIONS TO RADIOISOTOPIC DIAGNOSIS" (The Arthur Erskine Memorial Lecture)

9:30 WILLIAM G. SAUER, M.D., Rochester, Minnesota

"FACTITIAL ENTERITIS: AN UNUSUAL CAUSE OF INTESTINAL OBSTRUCTION, CHRONIC BLOOD LOSS, OR MALABSORPTION SYNDROME"

10:00 RECESS TO VISIT EXHIBITS

10:45 WALLACE MCCRORY, M.D., Iowa City, Iowa
"ACUTE VIRAL (ASEPTIC) MENINGITIS"

11:15 MANSOUR ARMALY, M.D., Iowa City, Iowa
"LESSONS TO BE LEARNED FROM A GLAUCOMA SURVEY"

11:45 CARROLL B. LARSON, M.D., Iowa City, Iowa
"RESULTS OF CUP ARTHROPLASTY OF THE HIP"

12:15 LUNCH

Tuesday Afternoon, April 21

2:00 SYMPOSIUM—CLINICAL USES OF RADIOISOTOPES

(A series of cases, illustrating the more well-established uses of various radioisotopes, will be presented. Discussion will include both diagnostic and therapeutic uses. Time permitting, less common uses and current research will be discussed.)

THOMAS A. BURCHAM, JR., M.D., Des Moines, Iowa, *Moderator*

RALPH M. KNISELEY, M.D., Castro Valley, Calif., *Pathology*

FRANK R. HENDRICKSON, M.D., Chicago, Illinois, *Radiology*

RICHARD E. PETERSON, M.D., Iowa City, Iowa, *Medicine*

DAVID A. CULP, M.D., Iowa City, Iowa, *Urology*

3:00 RECESS TO VISIT EXHIBITS

3:45 FRANK R. HENDRICKSON, M.D., Chicago, Illinois

"THE PLACE OF RADIOACTIVE ISOTOPES IN THE COMMUNITY HOSPITAL"

4:15 WINCHELL M. CRAIG, M.D., Rochester, Minnesota

"PROBLEMS INVOLVED IN THE TREATMENT OF INJURIES TO THE CENTRAL NERVOUS SYSTEM"

4:45 LLOYD KARR, Webster City, Iowa

"COURT APPEARANCES CAN BE PLEASANT"

Wednesday Morning, April 22

8:00 EXHIBITS

11:00 GUNNAR GUNDERSEN, M.D., LaCrosse, Wisconsin

"KEEPING THE PATHS OPEN"

11:30 Report of the House of Delegates

President-Elect's Address—JOHN W. BILINGSLEY, M.D., Newton, President-elect, Iowa State Medical Society
Installation of President

ANNUAL BANQUET

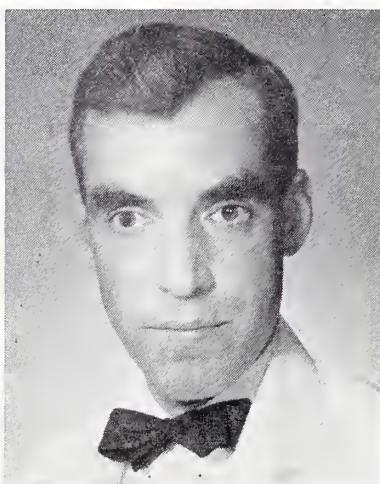
Tuesday, April 21, 7:00 p.m.

Grand Ballroom, Savery Hotel

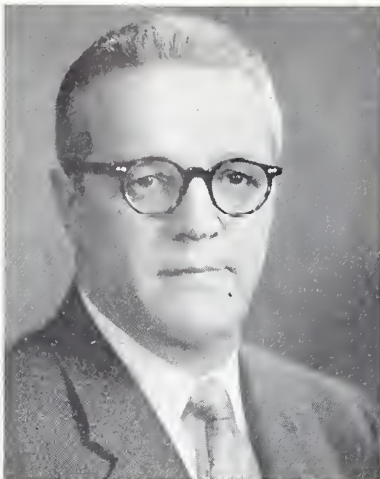
Tickets for sale at Registration Desk



Ralph M. Kniseley, M.D., of Castro Valley, California (left), is pathologist at Eden Hospital there, a consultant at Donner Laboratory, University of California, and at the Oak Ridge Institute of Nuclear Studies. He is a member of the Council on Radioisotopes of the American Society of Clinical Pathologists. Carroll B. Larson, M.D., of Iowa City (center), is professor and head of the Department of Orthopedics and director of rehabilitation at the S.U.I. College of Medicine. Robert Lich, Jr., M.D. of Louisville (right), is professor and head of the Department of Urology at the University of Louisville School of Medicine.

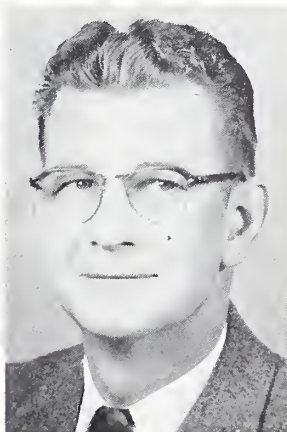


George C. Morris, Jr., M.D., of Houston (left), is an assistant professor of surgery and the director of the research laboratories at the Baylor University College of Medicine. Wallace W. McCrory, M.D., Iowa City (center), is professor and chairman of the Department of Pediatrics at the S.U.I. College of Medicine. Patrick A. Ongley, M.D., of Rochester, Minnesota (right), is a staff member in the Department of Pediatrics at the Mayo Clinic.



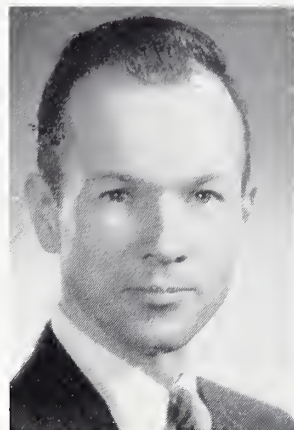
F. Johnson Putney, M.D., of Philadelphia (left), is an associate professor of laryngology and broncho-esophagology at the Jefferson Medical College of Philadelphia, and secretary of the Eastern Section, American Laryngological, Rhinological and Otological Society, and the American Broncho-Esophological Association. William G. Sauer, M.D., of Rochester, Minnesota (center), is a consultant in medicine at the Mayo Clinic and assistant professor of medicine, Mayo Foundation, University of Minnesota Graduate School. Roger B. Scott, M.D., of Cleveland (right), is an associate gynecologist and obstetrician at the University Hospitals of Cleveland and an associate professor of obstetrics and gynecology at the Western Reserve University School of Medicine.

Symposium on Exfoliative Cytology



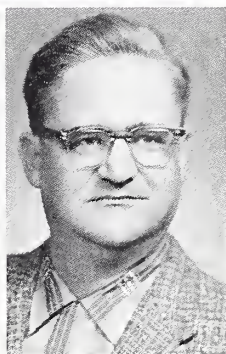
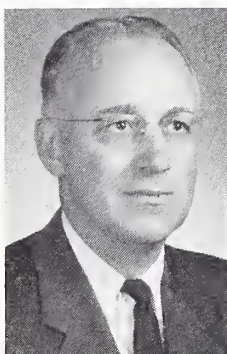
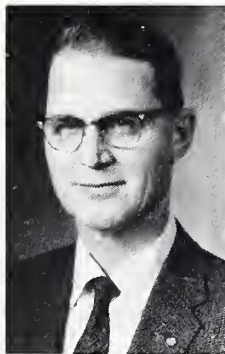
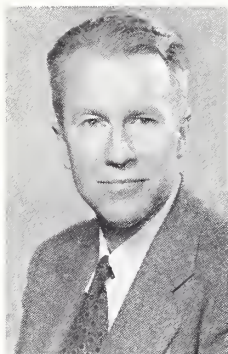
Harold W. Morgan, M.D., of Mason City (left), the moderator of the panel, is a private practitioner of radiology. John Fatland, M.D., of Iowa City (left center), is a member of the staff of the Department of Urology at the S.U.I. College of Medicine. Kenneth R. Cross, M.D., of Iowa City (right center), is acting chief of the Laboratory Service at the Veterans Administration Hospital there. He is also the pathologist at Mercy Hospital, and president of the Iowa Association of Pathologists. Merle J. Brown, M.D., of Davenport (right), is a private practitioner of surgery. Dr. Putney, previously pictured, will also participate in this panel.

Symposium on the Clinical Uses of Radioisotopes



Thomas A. Burcham, Jr., M.D., of Des Moines (left), the moderator of the panel, is a private practitioner of radiology. David A. Culp, M.D., of Iowa City (center), is an associate professor of urology at the S.U.I. College of Medicine. Richard E. Peterson, M.D., of Iowa City (right), is a clinical assistant professor of medicine at the S.U.I. College of Medicine, and chief of the Radioisotope Service at the Veterans Administration Hospital in Iowa City. Dr. Kniseley and Dr. Hendrickson, who have previously been pictured, will also participate in this panel.

ISMS Program Committee



From left to right in the top row are William Bean, M.D., Iowa City; Lester D. Powell, M.D., of Des Moines; John H. Randall, M.D., Iowa City; A. Reas Anneberg, M.D., of Carroll; and Henry H. Gurau, M.D., of Des Moines.

In the bottom row are G. E. McFarland, Jr., M.D., of Ames; W. M. Tice, M.D., of Waterloo; R. H. Flocks, M.D., of Iowa City; and G. J. Sartor, M.D., of Mason City.

The House of Delegates

Open to all members

SPEAKER

First Meeting—Sunday

April 19, 10:00 a.m.

South Room, Veterans Memorial Auditorium

Roll Call

Approval of the Minutes of the

Meeting Held on April 23, 1958

Reports of Officers

Reports of Committee Chairmen

Memorials and Communications

New Business

Election of Committee on Nominations



C. V. Edwards, M.D.

Second Meeting—Wednesday

April 22, 7:30 a.m.

*General Sessions Room
Exhibit Hall
Veterans Memorial Auditorium*

Roll Call

Reading of Minutes

Report of Committee on Nominations

Election of Officers

Reports of Committees

Unfinished Business

New Business

Announcement of Committee

Adjournment

Scientific Exhibits

State University of Iowa College of Medicine

COLLEGE OF MEDICINE ADMINISTRATION—Miss Alice White, College of Medicine

PSYCHIATRIC RESIDENT PROGRAM—Staff of Psychiatry

PREVENTION AND TREATMENT OF ANKLE SPRAINS—William D. Paul, M.D., Department of Rehabilitation

THE INTRAOCULAR EFFECTS OF THE PARASYMPATHETICS IN THE CAT—Mansour F. Armaly, M.D., Department of Ophthalmology

THE DES MOINES GLAUCOMA SURVEY—Mansour F. Armaly, M.D., Department of Ophthalmology

(Exhibit Title to be announced)—William H. Olin, D.D.S., Department of Otolaryngology

(Exhibit Title to be announced)—Robert E. Hodges, M.D., Department of Internal Medicine

(Exhibit Title to be announced)—John C. MacQueen, M.D., Department of Pediatrics

Veterans Administration Hospital Iowa City

THE ARTIFICIAL KIDNEY; ITS FUNCTION AND USE—Richard L. Lawton, M.D., Surgical Service

Veterans Administration Center Des Moines

THE PREPARATION OF TUBERCULOUS SPECIMENS: A NEW METHOD OF HOMOGENIZATION—Joseph H. Alli, Ph.D., and Thomas E. Corcoran, M.D., Laboratory Service

General

WHIPLASH AND LOW BACK PAIN—George S. Hackett, M.D., Canton, Ohio

LEPTOSPIROSIS IN ANIMALS AND MAN—Iowa State Department of Health, Division of Preventable Diseases

HEALTH EDUCATION—Iowa State Department of Health, Division of Health Education

IOWA ASSOCIATION OF MEDICAL ASSISTANTS

EXFOLIATIVE CYTOLOGY—Iowa Association of Pathologists

IOWA CHAPTER OF THE AMERICAN ACADEMY OF GENERAL PRACTICE

PHYSICAL THERAPY IN IOWA—Iowa Chapter of the American Physical Therapy Association

A COMMUNITY SERVICE—Iowa Children's Home Society

IOWA COMMISSION FOR THE BLIND
 THE SIMPLIFIED DIET MANUAL CAN SERVE YOU—
 Iowa Dietetic Association
 IOWA DIVISION OF VOCATIONAL REHABILITATION—
 Iowa Department of Public Instruction, Division
 of Vocation Rehabilitation
 TRAVELING THE SAME ROAD TO A COMMON DESTINA-
 TION—Iowa Heart Association
 THE PHYSICIAN'S ROLE AS A MEDICAL OFFICER IN
 THE IOWA NATIONAL GUARD—John R. Hyde,
 M.D., Iowa City

IOWA PHARMACEUTICAL ASSOCIATION
 EVOLUTION IN LABORATORY EQUIPMENT—Iowa So-
 ciety of Medical Technologists
 PRESCHOOL VISION SCREENING—Iowa State Com-
 mittee of the National Society for the Preven-
 tive of Blindness
 RESPIRATORY DISEASE—Iowa Trudeau Society
 NEW HEALTH FRONTS—The National Foundation
 POLK COUNTY MEDICAL SOCIETY
 CRIPPLED CHILDREN AND ADULTS—Polk County So-
 ciety for Crippled Children and Adults, Inc.

Technical Exhibitors

Abbott Laboratories, North Chicago, Illinois.
 A. S. Aloe Company, St. Louis, Missouri.
 American Cancer Society, Iowa Division, Mason
 City, Iowa.
 Baker Laboratories, Inc., Cleveland, Ohio.
 Benson Optical Company, Minneapolis, Minnesota.
 Blue Cross-Blue Shield Plans, Des Moines—Sioux
 City.
 Carnation Company, Los Angeles, California.
 CIBA Pharmaceutical Products, Inc., Summit,
 New Jersey.
 Cusack-Harmon Company, Sioux City, Iowa.
 Desitin Chemical Company, Providence, Rhode
 Island.
 Dictaphone Corporation, New York, New York.
 Doho Chemical Corporation, New York, New
 York.
 Eaton Laboratories, Norwich, New York.
 Encyclopaedia Britannica, Inc., Minneapolis, Min-
 nesota.
 Marshall Erdman & Associates, Inc., Madison, Wis-
 consin.
 C. B. Fleet Company, Inc., Lynchburg, Virginia.
 Foot-so-Port Shoe Company, Waterloo, Iowa.
 Geigy Pharmaceuticals, Yonkers, New York.
 General Electric Company X-Ray Department,
 Des Moines, Iowa.
 Holland-Rantos Company, Inc., New York, New
 York.
 Holmes, Prouty, Murphy and May, Des Moines,
 Iowa.
 House of Vision, Chicago, Illinois.
 Kremers-Urban Company, Milwaukee, Wisconsin.
 Lederle Laboratories Division, American Cyanam-
 id Co., Pearl River, New York.
 Eli Lilly and Company, Indianapolis, Indiana.
 J. B. Lippincott Company, Philadelphia, Penn-
 sylvania.
 P. Lorillard Company, New York, New York.
 S. E. Massengill Company, Kansas City, Missouri.
 Mastertapes Music, Inc., West Des Moines, Iowa.
 Mead Johnson & Company, Evansville, Indiana.
 Medco Products Company, Tulsa, Oklahoma.
 Medical Protective Company, Fort Wayne, In-
 diana.
 Merck Sharp & Dohme, Division of Merck & Co.,
 Inc., Philadelphia, Pennsylvania.

Merrill Lynch, Pierce, Fenner & Smith, Inc., Des
 Moines, Iowa.
 Milex Products, Peoria, Illinois.
 C. V. Mosby Company, St. Louis, Missouri.
 National Dairy Council—Iowa Program, Des
 Moines, Iowa.
 National Drug Company, Philadelphia, Pennsylvania.
 Parke, Davis & Company, Detroit, Michigan.
 Pepsi Cola General Bottlers, Inc., Des Moines,
 Iowa.
 Pet Milk Company, St. Louis, Missouri.
 Pfizer Laboratories, Brooklyn, New York.
 Physicians & Hospitals Supply Company, Min-
 neapolis, Minnesota.
 Picker X-Ray, Midwest, Inc., Sioux City, Iowa.
 Professional Management Midwest, Waterloo, Iowa.
 A. H. Robins Company, Inc., Richmond, Virginia.
 Robinson Wholesale Company, Des Moines, Iowa.
 Roche Laboratories, Nutley, New Jersey.
 J. B. Roerig & Company, New York, New York.
 Ross Laboratories, Columbus, Ohio.
 Sanborn Company, Waltham, Massachusetts.
 W. B. Saunders Company, Philadelphia, Penn-
 sylvania.
 Schering Corporation, Bloomfield, New Jersey.
 Sealy Mattress Company, Des Moines, Iowa.
 G. D. Searle & Company, Chicago, Illinois.
 Security Laboratories, Burlington, Iowa.
 Smith, Kline & French Laboratories, Philadelphia,
 Pennsylvania.
 E. R. Squibb & Sons, New York, New York.
 Standard Medical & Surgical Company, Des
 Moines, Iowa.
 Stuart Company, Pasadena, California.
 Thermo-Fax Dealers of Iowa, Des Moines, Iowa.
 Ulmer Pharmacal Company, Minneapolis, Min-
 nesota.
 Upjohn Company, Kalamazoo, Michigan.
 U. S. Vitamin Corporation, New York, New York.
 Warner-Chilcott Laboratories, Morris Plains, New
 Jersey.
 Whyllie-Farrell, Inc., Des Moines, Iowa.
 Winthrop Laboratories, Inc., New York, New
 York.

Special Meetings and Dinners

Sunday, April 19

**STATE SOCIETY OF IOWA MEDICAL
WOMEN**

and

**AMERICAN MEDICAL WOMEN'S
ASSOCIATION, BRANCH 19**

The annual meeting of the State Society of Iowa Medical Women and American Medical Women's Association, Branch 19, will be held at the home of Doctor Jean B. Glissman, 1068 Forty-second Street, Des Moines, Iowa on Sunday, April 19. A buffet supper will be served at 5:30 p.m., to be followed by a business meeting at 7:30 p.m. Guest speaker will be Miss Laura R. Conrad, of Sterling, Illinois. All women who are members of or eligible for membership in the Iowa State Medical Society are urged to make plans to attend this meeting.

GOLF TOURNAMENT

The annual golf tournament will be held in Des Moines Sunday, April 19, at the Wakonda Club. Physicians may play at any time during the day, but the majority will start at 1:00 p.m. Dinner and awarding of prizes will follow. Reservations should be made with Dr. Harold J. McCoy, 212 Bankers Trust Building, Des Moines 9, Iowa.

Attend the

**BLUE SHIELD FORUM
of
PARTICIPATING PHYSICIANS**

Wednesday, April 22-10 a.m.

General Sessions Room, Exhibit Hall 131
Veterans Memorial Auditorium

Monday, April 20

**IOWA ACADEMY OF GENERAL
PRACTICE**

Terrace Room—Hotel Savery

Cocktails—6 to 8 p.m.

All general practitioners and their wives are invited to attend. Tickets will be sold for \$1.00 per person.

**IOWA ACADEMY OF
OPHTHALMOLOGY AND
OTOLARYNGOLOGY**

Wakonda Club

Social Hour & Dinner—6:30 p.m.

Reservations: A. H. Downing, M.D.

616 Bankers Trust Building, Des Moines 9

IOWA ACADEMY OF SURGEONS

Wakonda Club

Business Meeting—6 p.m.

Social Hour and Dinner—7 p.m.

Reservations: R. B. Stickler, M.D.

1401 Woodland Avenue, Des Moines 9

**IOWA ASSOCIATION OF PATHOLOGISTS
and**

**IOWA SOCIETY OF MEDICAL
TECHNOLOGISTS**

Lounge and Library—Des Moines Club

Social Hour & Dinner—6:30 p.m.

Program: Address by Ralph M. Kniseley, M.D.

Castro Valley, California

Reservations: Wallace Rindskopf, M.D.

Iowa Lutheran Hospital, Des Moines 16

Special Meetings and Dinners (Continued)

IOWA DERMATOLOGICAL SOCIETY

Pioneer Room—Des Moines Club
Social Hour & Dinner—6 p.m.
Reservations: Robert G. Carney, M.D.
University Hospitals, Iowa City

IOWA NEUROPSYCHIATRIC SOCIETY

West Room—Hotel Savery
Social Hour—6 p.m. Dinner—7 p.m.
Reservations: H. C. Merillat, M.D.
2801 Woodland Avenue, Des Moines

IOWA ORTHOPEDIC SOCIETY

South Room—Des Moines Club
Dinner—6:30 p.m.
Reservations: William A. Baird, M.D.
313 Fifth Street, Ames

IOWA PEDIATRIC SOCIETY

Hermitage Room—Des Moines Club
Social Hour—6:30 p.m. Dinner—7:30 p.m.
Reservations: Ralph E. Dyson, M.D.
3200 University, Des Moines 11

IOWA RADIOLOGICAL SOCIETY

Colonial Room—Des Moines Club
Business Meeting—5 p.m.
Social Hour—6:30 p.m. Dinner—7:30 p.m.
Reservations: James T. McMillan, M.D.
1105 Bankers Trust, Des Moines 9

ISMS HEADQUARTERS HOTEL

—
HOTEL SAVERY
LOCUST AT FOURTH STREET

IOWA SOCIETY OF ANESTHESIOLOGISTS

Standard Club
Social Hour—6 p.m. Dinner—7 p.m.
Reservations: R. S. Jaggard, M.D.
Medical Center Building, Oelwein
Wives Are Invited

PAST PRESIDENTS DINNER

East Room—Hotel Savery
Dinner—7:00 p.m.

Tuesday, April 21

LEGISLATIVE CONTACT MEN

Des Moines Room—Hotel Savery
Breakfast—7:30 a.m.

ANNUAL BANQUET

Terrace Room—Hotel Savery
7:00 p.m.

BENEFIT DANCE

"An Evening in New Orleans"
Grand Ballroom—Hotel Savery—9:00 p.m.

Bill Austin's Orchestra
Sponsored by the Woman's Auxiliary for the
Benefit of Its Health Educational Loan Fund
Reservations: Mrs. N. W. Irving, Jr.
4916 Harwood Drive, Des Moines 12

Wednesday, April 22

BLUE SHIELD PARTICIPATING PHYSICIANS

Blue Shield Forum—General Sessions Room,
Exhibit Hall, Auditorium
10:00 a.m.

Blue Shield States Its Case

Principles of Insurance

WOODROW H. SHERIN

DES MOINES

THERE IS WIDESPREAD interest among physicians in voluntary prepayment programs for medical care. Because of this interest and because of Blue Shield's position in the voluntary prepayment field, it seems wise that each doctor should have an understanding of the time-honored actuarial principles by which it can be determined whether or not certain individuals can be insured and the terms on which their policies can be issued.

The basic principles of insurance are as follows:

1. The risk must be subject to the laws of mathematical probability.
2. There must be an insurable interest.
3. There should be a large number of independent risks spread over a fairly large geographic area.
4. The risk involved must be important to the insured individual.
5. There must be an element of uncertainty as to the occurrence of the event.
6. The existence of insurance should not have a tendency to increase the risk or to provide an opportunity for the insured to make a financial gain.
7. The risk must be measurable financially.

PROBLEMS WITHIN THE FOREGOING CATEGORIES

It may be well to state some of the problems that can arise within these seven categories.

First, it is necessary that one be able to predict with reasonable accuracy just how often the contingency insured against will occur. There are various frequency tables of life contingency and morbidity that are generally used. They are based on accumulative data from many sources, and the actuary uses them in calculating the contingencies.

Second, the insured must be involved to the extent that he would suffer a financial loss upon the occurrence of the event against which he is insured. It would not make good sense to ignore the insurable interest, since without it the insurance contracts that he might enter into, based on other people's unfortunate experiences, could constitute no more than gambling enterprises so far as he was concerned.

Diversity of risks is necessary in order to reduce the probability that the majority of persons insured under a single program would be eligible

for benefits at any one time. It is important that a geographical distribution of risks be assured, since a catastrophe in one large plant or in a single locality could very easily wipe out an insurance company unless tremendous surpluses were available. Since in the medical-surgical insurance business large surpluses are not usual, diversity of risks is especially important.

As for the fourth principle, if the risk to be insured against would be of little or no financial consequence to the insured, there is basically no reason for the insurance.

Fifth, if a person knows in advance that an event is going to take place at a given time or place, insurance is inappropriate, since budgeting is the proper method to meet such a loss.

Sixth, the existence of insurance should not result in unnecessary use of health services and/or facilities. This is one of the major problems confronting the health-insurance industry. In part, it is due to an overlapping of the forms of insurance and coverage in some types of losses. Duplication of coverage can lead to excessive use of health services or other forms of insurance because it gives the insured an opportunity to gain financially—something that is entirely contrary to the purpose for which the insurance program was created.

As for the final principle, the calculation of cost is of extreme importance because there is always a direct relationship between the benefits offered

This is the fifth of a series of articles discussing health insurance problems. The papers, some of them by Iowans and others by physicians from outside the state, are intended to provide a broad, factual base for really informed opinion.

Participation in Blue Shield requires certain responsibilities of its members. (1) They must keep informed. (2) They must actively search out informed and dedicated persons to direct Blue Shield affairs. (3) They must learn not to use Blue Shield as a buffer between disagreeing segments of the medical profession. (4) They must come to realize that Blue Shield is regulated by insurance laws and principles. (5) They must rededicate themselves to the service principle on which Blue Shield was founded. (6) They must believe in Blue Shield and make the weight of their ideals and their morality felt in determining its aims.

Mr. Sherin is executive director of Iowa Medical Service (Blue Shield).

and the premiums to be collected. Although it sometimes is necessary to make some compromises or grant some concessions on a calculated-risk basis, one cannot ignore a true cost relationship between the premiums to be collected, on the one hand, and the benefits to be paid and the administrative costs to be incurred, on the other.

Plans such as Blue Shield, in the prepayment field, have as their primary function the alleviation of financial stress occasioned by the expense of necessary physician care. It follows that routine health care costs—ones that can be anticipated and are of inconsequential size—cannot be covered by such insurance because such coverage would violate some of the fundamental principles

that I have enumerated, and furthermore the administrative costs would be out of all proportion to the insurance risk involved. Such costs can best be met by the individual patients through their own budgeting, and though there are a great many people who can't or won't do that sort of work for themselves, Blue Shield hasn't felt justified in doing it for them.

There are other circumstances which can be met by health care programs only through modifications of some basic principles. Blue Shield has attempted to be flexible enough to meet both patients' and physicians' demands, yet to keep as close as possible to good actuarial practice.

1958 Contributions to AMEF

Listed below are comparative figures for 1958 and 1957 contributions to the American Medical Education Foundation, the organization through which physicians and their wives help to support the nation's medical schools. A quick glance at the base of each column of figures gives the overall result—a dollar increase of \$148,000.

Iowans will next look for their own performance in each of the past two years, and there they will find no cause for satisfaction. Contributions from Iowa decreased by \$1,621, and on the basis of the number of doctors who practice in Iowa, the figure for 1957 hadn't been particularly creditable.

In all, physicians and their wives in 35 states increased their giving to AMEF during 1958. Indiana's total for 1958 was 2½ times that of the previous year, and reflects that state's entry into the ranks of those in which AMEF contributions are included in state medical society dues. A \$25,000 treasury gift from New Jersey (representing \$10 for each physician) accounts for that state's spectacular 1958 rise. Idaho showed a 342 per cent increase over 1957, and South Carolina led her southern neighbors with a 281 per cent increase. Delaware, Maryland, Massachusetts, New York, Ohio, Texas and the District of Columbia marked up increases ranging from \$2,350 to \$14,300.

Mr. John W. Hedback, executive secretary of AMEF, declares that "even though 1958 has shown a healthy growth, we do not plan to stabilize our program. A more vigorous campaign is called for to keep up with the ever growing needs of our medical schools."

	1957 Total	1958 Total
Alabama	\$ 6,599.00	\$ 8,387.16
Alaska	125.00	1,414.50
Arizona	9,113.00	12,638.97
Arkansas	2,046.00	2,044.50
California	165,105.00	171,611.20
Colorado	23,997.00	21,326.70
Connecticut	15,362.00	16,271.53
Delaware	3,004.00	5,359.55
District of Columbia	7,156.00	11,412.50
Florida	6,460.00	6,978.15
Georgia	3,586.00	4,494.60

Idaho	886.00	3,031.45
Illinois	199,257.00	200,191.59
Indiana	19,568.00	50,259.97
Iowa	7,841.00	6,220.00
Kansas	15,128.00	15,251.22
Kentucky	1,540.00	2,425.68
Louisiana	2,316.00	3,725.87
Maine	823.00	1,232.75
Maryland	4,604.00	7,316.50
Massachusetts	5,419.00	7,767.91
Michigan	9,621.00	10,974.83
Minnesota	36,846.00	33,297.50
Mississippi	2,227.00	3,033.36
Missouri	9,127.00	8,049.14
Montana	3,740.00	4,259.46
Nebraska	9,497.00	9,506.06
Nevada	5,563.00	7,055.34
New Hampshire	2,991.00	2,635.06
New Jersey	17,348.00	48,697.16
New Mexico	6,043.00	7,446.00
New York	42,511.00	49,636.39
North Carolina	5,690.00	5,338.89
North Dakota	2,549.00	4,080.00
Ohio	33,142.00	41,651.20
Oklahoma	1,458.00	1,602.50
Oregon	10,641.00	6,539.00
Pennsylvania	64,764.00	63,699.70
Rhode Island	462.00	892.00
South Carolina	14,267.00	40,149.36
South Dakota	8,647.00	6,615.00
Tennessee	7,719.00	6,916.19
Texas	29,717.00	44,013.90
Utah	11,041.00	11,064.75
Vermont	2,186.00	2,507.00
Virginia	7,209.00	8,875.50
Washington	9,116.00	11,239.03
West Virginia	5,881.00	7,735.04
Wisconsin	8,687.00	8,611.23
Wyoming	3,491.00	2,671.32
Hawaii	2,483.00	1,767.48
Puerto Rico	45.00	33.00
Foreign	0.00	90.00
AMA	100,000.00	100,000.00
Interest	10,239.00	13,608.89
TOTAL	\$984,884.00	\$1,133,653.58



Scientific Articles

The Risk to the Fetus in Cesarean Section

H. CLOSE HESSELTINE, M.D., AND UWE E. FREESE, M.D.

CHICAGO, ILLINOIS

ATTITUDES REGARDING the indications for and the uses of cesarean section change from time to time, and vary from locality to locality, but there are certain basic principles upon which there is general agreement. First, cesarean section is an indispensable operative procedure, for it can be lifesaving for the mother as well as for the fetus. Second, the average blood loss is greater than in vaginal delivery. Third, delivery through the abdominal wall usually requires a longer hospitalization and also a longer convalescence.

Actually, it can be said that the advances in medical science and in obstetric technics have brought about a new "plateau of motherhood," for the maternal mortality rate has declined so much in 2½ decades that the gravid patient today has as good a prognosis as her non-gravid sister, if not a better one. Prenatal care throughout pregnancy has largely compensated for the infrequent hazards peculiar to gestation and labor, and the improvement in medical concepts and the fact that most women are delivered in hospitals today have contributed to a phenomenal safety in obstetrics.

But patients who must be delivered abdominally are subjected to an added risk that appears irreducible. It is a well established fact that the average blood loss attending cesarean section exceeds 500 cc., an amount equivalent to a postpartum hemorrhage incident to vaginal delivery. Admittedly, not all patients will lose so much during the operation, but quite a number will lose considerably more, even in the absence of conditions associated with great blood loss, and though blood loss can be balanced by blood replacement, there is an inherent risk in transfusions. Furthermore, infused blood and blood substitutes do not

compensate for a waste of the patient's own blood. Fluids and electrolytes, sedatives and proper nutrition must be relied upon judiciously to prevent or treat exhaustion, dehydration and fluid imbalance. Yet, when the indications dictate cesarean section, these risks to the mother must be faced.

PURPOSE OF OUR STUDY

Numerous studies have been made in an attempt to determine the indications for cesarean section and to establish an acceptable incidence for the procedure, but the inherent dangers to the fetus have been less thoroughly evaluated. Thus, the study to be reported in this paper was designed to facilitate a full comprehension of the actual risks to which the fetus is subjected under the most favorable conditions. If the fetal prognosis was revealed as especially good, a basis would be established for a more frequent use of the operation. But if, on the contrary, the outlook for the fetus was shown to be unfavorable, obstetricians would be given cause for special caution in its use.

Lay people believe that cesarean section assures life to the child, and too often physicians fail to correct that mistaken impression. Actually, the survival rate is somewhat less than 100 per cent. Davis,² in his study of 781 cesarean sections performed between August, 1948, and July, 1952, reported a neonatal mortality of 3.2 per cent and a total perinatal mortality of 4.3 per cent. His cases included premature infants and included term babies regardless of the state of the mother or the fetus. At about the same time, Potter and Jack studied 19,927 births at this institution⁶ and found that the perinatal death rate for all infants weighing 1,000 Gm. or more at birth was 2.0 per cent, and the neonatal death rate was less than 1.1 per cent. For a 20-year period, these same investigators found a 0.4 per cent mortality rate in

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term live births. This rate was an uncorrected figure.

These figures correspond with the observations reported by Donnelly³ on cesarean sections in the State of Iowa. She noted that the maternal and fetal mortality rates in association with cesarean section had both been higher than those in association with vaginal delivery.

Among 1,000 consecutive cesarean section deliveries in a private hospital on which Bloxom reported,¹ there had been only two neonatal deaths, and both infants had died because of respiratory failure. He noted an increasing frequency in the use of spinal anesthesia and of trial labor, and explained the favorable fetal salvage rate on the basis of those trends. The infants who had difficulty following cesarean section were from mothers not in labor. Lund⁵ emphasized some of the same points. Difficulties were fewer among infants whose mothers were complication free, according to his report, and he stressed the advantage of spinal anesthesia over general anesthesia.

The report of Erhardt and Gold⁴ on cesarean sections in New York City during 1954 and 1955 revealed a 1.7 per cent neonatal mortality among infants weighing between 2,501 and 3,000 Gm., and rates varying between 0.8 and 0.9 per cent for those weighing between 3,001 and 4,500 Gm. Their rate of 0.4 per cent for infants weighing over 4,500 Gm. may not be reliable, for they had only 252 such patients for statistical evaluation. The higher rate for the 2,501-3,000 Gm. group may have been due to a greater likelihood of maternal complications. These data were pooled from the records of a number of hospitals, and are uncorrected. The elective cesarean section group

alone had a neonatal death rate of 2.6 per cent, and there were 2.2 per cent deaths among infants given birth by cesarean section because their mothers had previously been delivered in that way.

MATERIAL

The period chosen for this study extended from July 1, 1947, to June 30, 1957. During that length of time, 36,512 mothers were delivered of 36,903 babies at the Chicago Lying-in Hospital. For that 10-year period, the cesarean rate was approximately 5 per cent. On a yearly basis there were some slight variations, but 1,850 of the 36,903 infants were delivered by section.

At the beginning of this study, a number of factors were recorded. They included the mother's age, parity, analgesia, anesthesia and nature of labor, and the behavior of the newborn. Patients were excluded from the study group if the births were known to have involved risks for the fetuses. The grounds for those exclusions included placenta previa, abruptio placentae, diabetes, erythroblastosis, fetal embarrassment before delivery, toxemia and other conditions. Thus, 1,003 of the most favorable cases were chosen for study.

The salvage of newborn by cesarean section will be compared with the over-all survival, for the facts as regards survival are sharp and concrete, but residual damage to surviving infants is not so definite.

The indications for section in the cases chosen for study had included (1) previous cesarean section, or previous surgery of the mother's pelvic organs including myomectomy, hysterotomy and extensive vaginal repair; (2) dystocia (failure of

TABLE 1
PREMATURE BIRTHS BY CESAREAN SECTION
64 Cases

Indication	Weight Range	Anesthesia		Labor HOURS			Respiration		Death
							NORMAL	EMBARRASSED	
Previous cesarean 52	2185-2475 Gm.	Local	5	Yes 3*	1-3		3*		
				No 2			1	1	
	1715-2438 Gm.	Gas	5**	Yes 1	5		3	1**	
				No 4				1	
	1540-2495 Gm.	Spinal	42	Yes 14†	1-6		9*	3*	2
				No 28†			23†	3	2
Prior pelvic surgery 2	2385-2490 Gm.	Gas	1	Yes 1	3			1	
				No 1			1		
Dystocia 5	2040-2410 Gm.	Spinal	5	Yes 3	4-12		3		
				No 2			2		
Malposition 2	2405-2420 Gm.	Spinal	2	Yes 1	18		1		
				No 1			1		
Medical 1	2065 Gm.	Spinal	1						
				No 1			1		
Miscellaneous 2	2280-2435 Gm.	Spinal	2						
				No 2			2		

* One of twins.
** Ethylene, oxygen and ether
† Twins.

progress due to rigid tissue, bony disproportion, pelvic tumor, etc.); (3) faulty labor (inadequacy of mechanism or inertia); (4) malposition of fetus; (5) medical conditions (cardiac or neurologic disease, etc.); and (6) miscellaneous (primiparous elderly mother, extensive pelvic varicosities, etc.).

During the same period, 64 premature babies were delivered by cesarean section for the same indications—an incidence of approximately 6 per cent. Of those 64 premature infants, 41 were delivered from women not in labor. Thus, there was approximately a 4 per cent error in estimation of maturity (Table 1). Respiratory embarrassment occurred in 10, and death in 4, for an incidence of 20+ per cent. The four deaths resulted from respiratory failure, hyaline membrane or atelectasis. The fetal weights were all above 1,500 Gm. Table 2 gives a condensed view of the relation of premature birth to labor and anesthesia.

To classify as labor, uterine contractions must have persisted for an hour or more. The three categories of anesthesia are self-explanatory. Spinal anesthesia was administered by single injection or by the continuous technic. For the single spinal injection, pantocaine was given in 10 mg. amounts. Novocaine was used in an occasional instance in the same dosage. The continuous spinal anesthetic agent was novocaine. Spinal fluid was the usual solvent, and the drug concentration was 5 per cent. In the original computation, no apparent differences were found between their effects upon the infant, and thus the two subtypes are both reported here as “spinal anesthesia.”

Cases showing an appreciable fall in blood pressure were eliminated from the study. This complication occurred only a few times.

Novocaine was the drug used routinely for local anesthesia, in a concentration of 0.5 per cent in sterile distilled water, and 1 cc. of 1:1,000 adrenalin was added. Cyclopropane (with oxygen) was the usual inhalation anesthetic, but in an occasional instance ethylene and ether vapor (and oxygen) were used.

In the original tabulation, the lengths of labor were broken into time divisions, but the patterns were essentially uniform, and accordingly the numbers were combined for simplification.

The largest group of term babies delivered by cesarean section were those belonging to mothers who had had the same procedure previously. In earlier years at this institution, it was a rather common practice to allow such patients to go into labor, but so doing was found to increase the risk of uterine rupture, and too often the patient had recently ingested a full meal. More recently, these women have been electively scheduled for abdominal delivery near term. As we have said, however, the records reveal a 4 per cent error in our estimations of the maturity of the fetuses.

Of these 741 term infants, there were 42 whose mothers had had local, 93 whose mothers had had gas, and 606 whose mothers had had spinal anesthetics. More detail regarding the relationship of anesthesia to labor and respiratory response can be found in Table 3. There was one neonatal death in the local anesthetic group. In that instance labor had begun before the cesarean was undertaken.

TABLE 2
PREMATURE BIRTHS BY CESAREAN SECTION
(Summary of data in previous table)

Indications	Fetal Wt. Range	Anesthesia		Labor HOURS			Respiration		Death
							NORMAL	EMBARRASSED	
All 64	2185-2495	Local	5	Yes 3 No 2	1-3		3 1	1	
	1715-2438	Gas	6	Yes 2 No 4	3-5		3	2 1	
	1540-2495	Spinal	53	Yes 18 No 35	1-12		13 30 50	3 3 10	2 2 4

TABLE 3
TERM INFANTS DELIVERED BY SECTION BECAUSE OF MOTHERS' PREVIOUS SECTIONS
(741 Infants)

Weight Range	Anesthesia	Labor HOURS			Respiration		Death
					NORMAL	EMBARRASSED	
2500-4315	Local (42)	Yes 4* No 38	1-4		3 38		1
2525-4580	Gas (93)	Yes 15 No 78	1-10		12 65	3 12	1
2500-5305	Spinal (606)**	Yes 64 No 542	1-11		64 516**	19	7

* 1 Twin.

** 4 Sets of twins.

There was one neonatal death in the gas group, and there were seven neonatal deaths in the spinal group. Respiratory embarrassment occurred moderately often. There were 15 instances of fetal embarrassment among the 93 babies whose mothers had had inhalation anesthesia, but only 19 among those whose mothers had had spinal anesthesia. The embarrassments were manifested by retraction of the chest wall or unsatisfactory respiratory excursions or behavior. A total of 9 infants died, all from respiratory causes, and 54 others out of a total of 741 had respiratory embarrassments.

Table 4 lists a total of 98 patients who had dystocia, actual or inevitable. *Inevitable*, in this context, means that the mother's pelvis was obstructed by tumor. There were no fetal deaths or embarrassments in this group. The relationship between the type of anesthesia and the presence of labor was not recorded.

The 36 mothers who had had previous pelvic surgery (myomectomy, hysterotomy or extensive vaginal repair) are grouped together in Table 5. Delivery through the abdominal wall was deemed

to be the proper management. Only two of these women had received gas, and the remaining 34 had had spinal anesthsias. It will be noticed that only two were in labor. There were no infant deaths or fetal embarrassments.

Faulty labors (Table 6) included those of patients who developed secondary inertia or failed to develop adequate labor. All of those women had ample pelvic measurements and soft tissues favorable for labor. There were only 21 of them. One baby born to a woman of this group had respiratory embarrassment, but there were no fetal deaths.

Malposition of the fetus (Table 7) includes transverse lie, opisthotonus, face and other abnormal presentations or positions. This group totaled 46 patients. One infant had respiratory embarrassment. The nature of the labor and the type of anesthesia fell reasonably well within the general pattern.

Medical contraindications to normal delivery were encountered 21 times (Table 8), and not one of these women was in labor. The entities included heart disease, pulmonary tuberculosis and

TABLE 4
TERM INFANTS DELIVERED BY SECTION BECAUSE OF DYSTOCIA
(98 Infants)

Weight Range	Anesthesia	Labor		HOURS	Respiration		Death
					NORMAL	EMBARRASSED	
2680-3410	Local (7)	Yes	3	4-15	3		
		No	4		4		
2730-4580	Gas (10)	Yes	6	2-10	6		
		No	4		4		
2520-5305	Spinal (81)	Yes	16	2-17	16		
		No	65		65		

TABLE 5
TERM INFANTS DELIVERED BY CESAREAN SECTION BECAUSE OF MOTHERS' PREVIOUS PELVIC SURGERY
(36 Infants)

Weight Range	Anesthesia	Labor		HOURS	Respiration		Death
					NORMAL	EMBARRASSED	
2750-3150	Gas (2)	No	2		2		
2505-4020	Spinal (34)	Yes	2	1-4	2		
		No	32		32		

TABLE 6
TERM INFANTS DELIVERED BY CESAREAN SECTION BECAUSE OF FAULTY LABOR
(21 Infants)

Weight Range	Anesthesia	Labor		HOURS	Respiration		Death
					NORMAL	EMBARRASSED	
3255-4095	Local (2)	Yes	1	10	1		
		No	1		1		
3175-3642	Gas (2)	Yes	1	8	1		
		No	1		1		
2700-4280	Spinal (17)	Yes	9	8-29	9		
		No	8		7	1	

asymptomatic hypertension. In one infant, there was a poor respiratory response at first.

Patients with miscellaneous conditions (Table 9) added up to 40. This group was composed of multiple conditions or complications of which just one alone might not have been a proper indication for section. Delivery was accomplished under spinal anesthesia in 37 instances. Not one of the 40 mothers was in labor. There were no fetal deaths or embarrassments in this group.

These last six groups are individually too small for statistical significance, but there are a sufficient number of cases in the first group (previous cesarean section). The last six groups totaled 262 patients.

The anesthetic agents for the 262 patients were: 14 local anesthesia; 20 gas; and 228 spinal. In the local anesthetic group, none of the newborn had respiratory embarrassment. One of the 20 infants delivered under gas had such trouble. Labor had not begun in that case. Only two of the 228 delivered under spinal anesthesia had respiratory trouble. Neither of their mothers had gone into

labor. It will be recalled that in the previous-cesarean group there were 34 term infants who had respiratory embarrassment, and 9 others who died from that difficulty. Some clinicians believe that normal labor is not ordinarily harmful to the fetus, and on this basis these patients were included.

For the entire series of 1,003 live-born term infants, 139 mothers were in labor at the time of operation, and 864 were not in labor (Table 10). Of the 139 infants whose mothers had started labor, 3 had respiratory embarrassment, whereas of the 864 whose mothers were not in labor, 34 were embarrassed. The percentages in these two groups were 21 and 39 per cent, respectively. There was one infant death (0.7 per cent) in the labor group, and eight fetal deaths (0.9 per cent) in the non-labor group. Combining infant deaths and fetal embarrassments, one finds that the rates are 3 per cent for those in labor, and 5 per cent for those not in labor. It appears clear that 864 is a sufficiently large number to be significant, but the lesser number cannot be so definitely labeled.

TABLE 7
TERM INFANTS DELIVERED BY CESAREAN SECTION BECAUSE OF FETAL MALPOSITION
(46 Infants)

Weight Range	Anesthesia	Labor		Respiration		Death
			HOURS	NORMAL	EMBARRASSED	
3655	Local (1)	Yes	8	1		
3750-3805	Gas (2)	Yes	1	1		
		No	1	1		
2500-4125	Spinal (43)	Yes	16	16		
		No	27	26	1	

TABLE 8
TERM INFANTS DELIVERED BY CESAREAN SECTION BECAUSE OF MEDICAL INDICATIONS
(21 Infants)

Weight Range	Anesthesia	Labor		Respiration		Death
			HOURS	NORMAL	EMBARRASSED	
2925-3200	Local (3)	No	3	3		
3100-3430	Gas (2)	No	2	1	1	
2685-4285	Spinal (16)	No	16	16		

TABLE 9
TERM INFANTS DELIVERED BY CESAREAN SECTION BECAUSE OF MISCELLANEOUS CONDITIONS
(40 Infants)

Weight Range	Anesthesia	Labor		Respiration		Death
			HOURS	NORMAL	EMBARRASSED	
2730	Local (1)	No	1	1		
3350-3615	Gas (2)	No	2	2		
2540-4610	Spinal (37)	No	37	37		

DISCUSSION

Cesarean section is an important and necessary operative procedure in good obstetric practice. On the average, there is a greater blood loss for the mother during cesarean section than during delivery by the vaginal route. The unavoidable scar in the uterine wall, if it heals with a defect, may jeopardize the mother and her unborn child during a subsequent pregnancy. Although there are physicians who maintain that patients previously delivered by cesarean section may be allowed to deliver vaginally, we do not subscribe to that view. A number of experiences have convinced us that the hazard in electing vaginal delivery in such cases is unjustified, and the available data indicate that cesarean section is quite often done because of a previous section.

Even with the selected favorable group, neonatal mortality was 0.9 per cent in 1,003 cases, whereas an uncorrected figure for all term live births at our institution shows a neonatal mortality of 0.4 per cent.

During the period of this study, there were an additional 947 patients delivered by cesarean section because of conditions which could or had caused fetal embarrassment. These conditions were prolapse of the umbilical cord, placenta previa, abruptio placentae or other conditions. In these instances, there was a decidedly higher fetal loss. The neonatal loss in association with all cesarean section deliveries was 3.2 per cent, whereas the stillbirth rate was 1.1 per cent. The cesarean section incidence for the 10-year period was 5 per cent. The study group of 1,003 infants delivered by section composed 2.7 per cent of the total births that occurred during the period. For the type of patient and the nature of material, the 5 per cent incidence for cesarean section seems logical.

In spite of the medicolegal hazards in the use of spinal anesthesia and the distressing headaches which it inflicts upon a moderate number of women, it is a preferred anesthesia from the point of view of fetal salvage. If the fetus is premature and delivery must be accomplished by the abdominal route, a spinal or a local anesthesia should be used unless there are contraindications. Local anesthesia has its value, but it also has limitations

and disadvantages. One must recognize the limitations of the spinal technic, too. There no doubt is a place for inhalation anesthesia, but in only a carefully selected few cases.

The serious risk in the planning of elective cesarean sections can be seen in the cold fact that there were 4 per cent premature infants among the babies so delivered at our institution.

CONCLUSIONS

Though cesarean section is an indispensable procedure, it has hazards for both mother and baby today. The mothers will suffer a blood loss equal, on the average, to that occasioned by a postpartum hemorrhage, and their hospitalizations will be longer than is ordinarily necessary after a vaginal delivery. Their convalescences will also be prolonged. Furthermore, there is no assurance of sound uterine scars.

For some reason, a previously unembarrassed fetus apparently has an increased tendency toward poor respiratory behavior, atelectasis, chest retraction and, perhaps, hyaline membrane disease in association with delivery by section.

In planning elective cesarean section, one should be certain that the fetus is of term size. Infants delivered through the abdominal wall should be watched closely and treated promptly for any respiratory difficulty. Efforts must be made to improve this critical matter. The cesarean section procedure must not be abused, yet it must not be neglected. There is no greater goal than that of assuring a healthy mother and a normal, healthy infant!

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TABLE 10
TERM INFANTS DELIVERED BY CESAREAN SECTION
(Summary of Data in Previous Tables)

Weight Range	Anesthesia	Labor		HOURS	Respiration		Death
					NORMAL	EMBARRASSED	
2500-4315	Local (56)	Yes	9*	1-15	8		1
		No	47		47		
2525-4580	Gas (113)	Yes	23	1-10	20	3	1
		No	90		76	13	
2500-5305	Spinal (834)**	Yes	107	1-29	107		7
		No	727		699**	21	

* 1 of twins. ** 4 Sets of twins.

The Human Hemoglobins

M. E. ALBERTS, M.D.

DES MOINES

THE HUMAN HEMOGLOBINS have aroused a great deal of interest during the past several years, as the medical literature shows, and as a consequence many changes have occurred in our concepts of the various hemolytic anemias.

The hemolytic disorders associated with abnormal hemoglobin vary from simple abnormalities in erythrocytes to severe hemolytic anemias. The facilities now available for hemoglobin typing afford us opportunities to establish more specific diagnoses, and thereby are enabling us to give our patients more accurate advice and adequate care. Thus, it seems timely to review this subject in a not too technical manner to insure that practicing physicians have an appreciation of these new concepts.

Sickle-cell anemia was first described in 1910 by Herrick¹ in his report of a 20-year-old Negro who demonstrated "peculiar elongated and sickle-shaped red blood corpuscles in a case of severe anemia." Pauling *et al.*,² in 1949, first described sickle-cell hemoglobin and introduced to medicine the concept of molecular disease—that certain diseases are due to genetically-determined abnormalities of protein synthesis. Since these early reports, further data have been produced on a number of different hemoglobins, showing their significance and their occurrences among various peoples.^{3, 4}

Although several of the hemoglobin types in human beings possess distinctive biochemical properties, the exact ways in which they differ, one from another, remain to some extent an unsolved problem. All the human hemoglobins have identical molecular weights, and the isolated heme portions seem to be alike. Thus, any differences would appear to be in the amino acid portion and com-

position of the globin radical. Recent observations by Ingram⁵ indicate that the difference is in the type of amino acid attached to a certain peptide in the amino acid chain. He has shown, for example, that on a designated peptide the normal hemoglobin A has glutamic acid, and on the same peptide the abnormal sickle-cell hemoglobin has valine, whereas hemoglobin C demonstrates lysine on the same peptide.

Some other factors which are shown to be variable for the different hemoglobins include:

- (a) crystallographic findings, including the results of x-ray diffraction studies
- (b) isoelectric points
- (c) spectrophotometric differences in the ultra-violet region
- (d) spread as a monomolecular film on the surface of a liquid
- (e) solubilities, as for example in a strong phosphate buffer
- (f) immunologic specificity
- (g) oxygen dissociation curve
- (h) rate of coagulation by heat
- (i) peroxidative activity.

In 1866, von Körber⁶ first detected that solutions of hemoglobin from red blood cells of cord blood were resistant to destruction or denaturation by highly alkaline solutions, whereas normal adult hemoglobin rapidly denatured under the same conditions. This test is still a very valuable method for detecting fetal hemoglobin. In the technic described by Singer,⁷ an approximate 10 per cent hemoglobin solution is denatured for exactly one minute by N/12 sodium hydroxide, the reaction being halted and the denatured hemoglobin precipitated by the addition of a 50 per cent saturated ammonium sulfate reagent. The concentration of the hemoglobin in the filtrate is next determined photoelectrically.

Paper electrophoresis is another valuable means of identifying various hemoglobins. *Electrophoresis* is the term designating the migration of charged particles in an electrolyte solution that takes place when an electric current is passed through it. Thus, plasma proteins as well as various hemoglobins may be separated in accordance with their isoelectric points, and individual mobilities can thereby be identified. These mobilities are plotted on paper prepared in a particular manner for the procedure.

A number of different human hemoglobins have been described and identified by the above methods. For simplicity and uniformity, these have been given alphabetic designations. Table 1 lists

TABLE 1
RECOMMENDED NOMENCLATURE FOR
HUMAN HEMOGLOBINS

Nomenclature	Synonyms and Terms Previously Used
Hemoglobin A	Normal adult Hgb; Hgb N; Hgb a
F	Fetal Hgb; Hgb f
S	Sickle-cell Hgb; Hgb b
C	Hgb III; Hgb c; Hgb x
D	
E	
G	
H	
I	
J	
P	Primitive Hgb
M	

the human hemoglobins and some of their synonyms known to date. Figure 1 is a schematic representation of the migration patterns in paper electrophoresis at a pH of 8.6 for the various hemoglobins. Note that hemoglobin H migrates farthest from the anode, whereas hemoglobin C migrates least. Fetal hemoglobin is not to be confused with the primitive hemoglobin P, which is found in the early human embryo, but is quickly replaced by the fetal type of hemoglobin. Electrophoretically, hemoglobin P is slower than hemoglobins A and F.

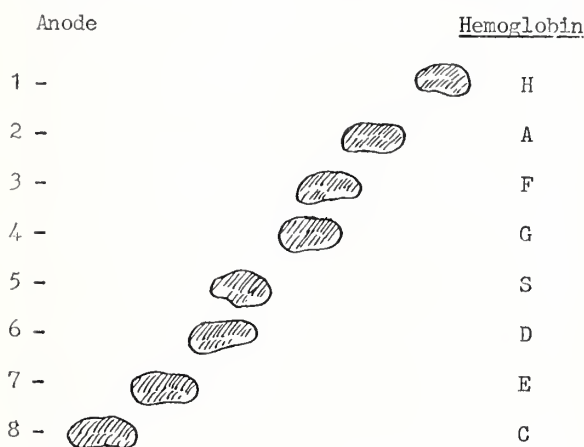


Figure 1. Schematic representation of the electrophoretic mobilities of the human hemoglobins at pH 8.6.

Abnormal hemoglobin types are transmitted genetically, and an individual may demonstrate several inherited aspects of hemoglobin type: (a) purely normal (hemoglobin A only); (b) one gene each for the normal and an abnormal hemoglobin; (c) two genes for any given abnormal hemoglobin; or (d) two genes for two different abnormal hemoglobins. Thus, the gene for any of the abnormal hemoglobin types may replace any gene for the normal adult hemoglobin. It is interesting to note that geneticists and biochemists are utilizing the knowledge we have of the hemoglobins to unravel some of the mysteries of heredity and human mutations.⁸

For further clarification of terms, it should be explained that when only one normal gene is replaced by an abnormal gene, we refer to the situation as a heterozygous trait. In such a situation, the individual is asymptomatic or has slight hemolytic disease. When both normal genes are replaced by the same abnormal gene, the state is referred to as homozygous, and the individual faces severe anemia. A mixed heterozygous state, with intermediate grades of hemolytic disease, exists when both normal genes are replaced by two different abnormal genes. Figures 2 and 3 are schematic demonstrations of the heterozygous and homozygous states.

Fetal hemoglobin normally exists in the fetus after it has replaced the earlier embryonic primi-

tive form. Healthy newborn infants demonstrate from 44 to 89 per cent fetal hemoglobin. Within the first seven to 12 months, this is replaced by hemoglobin A, or in the hemoglobinopathies by the respective abnormal pigment. Small amounts—less than two to five per cent—may continue to be demonstrated in normal preschool children, and minute amounts have been demonstrated in normal adults. The production of hemoglobin F does not cease abruptly after delivery, and is not confined to extramedullary hematopoiesis. Although this hemoglobin does have a greater affinity for oxygen, the evidence is not convincing that hemoglobin F is functionally better than hemoglobin A.

MEDITERRANEAN ANEMIAS

Fetal hemoglobin has its greatest significance in its incidence in the so-called Mediterranean anemias, wherein it may appear in concentrations of up to 100 per cent, whereas in the less severe forms it may be present in proportions as low as 12 per cent. Sickle-cell anemia may show between five and 15 per cent hemoglobin F, and hereditary spherocytosis may demonstrate 10 per cent or less of this hemoglobin. The presence of hemoglobin F is thought to be a non-specific result of anemic stress on the hemoglobin formation. It is not analogous to the abnormal hemoglobin S, which is produced under a more direct influence of altered genes. The Mediterranean anemias are now more clearly classified as the thalassemia syndromes, and are divided according to the concentration of the abnormal hemoglobin, the factor that accounts for the varying degrees of severity. Singer⁹ classifies these disorders as follows:

(a) *Thalassemia major* (Cooley's anemia): a very severe microcytic hemolytic anemia with 40-100 per cent concentration of hemoglobin F

(b) *Thalassemia intermedia*: less severe than the major form, but still a marked anemia demonstrating 20-40 per cent hemoglobin F

(c) *Thalassemia minor*: a mild anemia in which hemoglobin F may or may not be detected

(d) *Microcytic erythrocytosis*: a condition in which hemoglobin F may or may not be detected

(e) *Thalassemia minima*: slight leptocytosis (thin target cells) only, with no demonstrable hemoglobin F.

The hematologic features of thalassemia syndromes include low mean corpuscular volume (MCV) and mean corpuscular hemoglobin (MCH), with the mean corpuscular hemoglobin concentration (MCHC) decreased in the major forms. Leptocytosis (target cells) can be regarded as a classic feature of this group of anemias. The osmotic fragility is decreased to such a severe degree in thalassemia major that the cells may not hemolyze even in distilled water.

Clinical manifestations associated with the severe anemic forms of this syndrome include the

classical findings of the Mongoloid facies, bone changes, enlarged spleen and liver, chronic ulcers of the legs and gallstone formation. The prevalence of this abnormal trait is greatest in Italy, Greece and Syria, but it is also described in India, Thailand, Indonesia, China and among American Negroes. Neel and Valentine, in a study of Italians in Rochester, New York, estimated the incidence of thalassemia minor as one per 25 births and of thalassemia major as one per 2,368 births.¹⁰

The major form of this syndrome (more commonly called Cooley's anemia) starts in early infancy and requires frequent blood transfusions to maintain life. The condition usually terminates fatally in a few short years.

Another condition associated with the abnormal hemoglobin F is *hereditary spherocytosis*, wherein the abnormal hemoglobin may be present in amounts up to eight per cent. Although the anemia disappears after splenectomy (which is not the case in the thalassemias), the production of hemoglobin F continues unaltered.

SICKLE-CELL ANEMIA

Sickle-cell disease refers to all the disorders associated with red blood cells carrying the abnormal hemoglobin S. The hemoglobin, not the stroma of the cell, is responsible for the odd shape of the red cells (drepanocytosis). The sickling is induced by a poor supply of oxygen, with a resulting collapse of the cell and a loss of elasticity. Thus, the cells more readily obstruct capillaries, increase the viscosity of the blood and initiate thromboses. Hemoglobin analysis provides a sharp classification of the various forms of this disease on an objective basis.

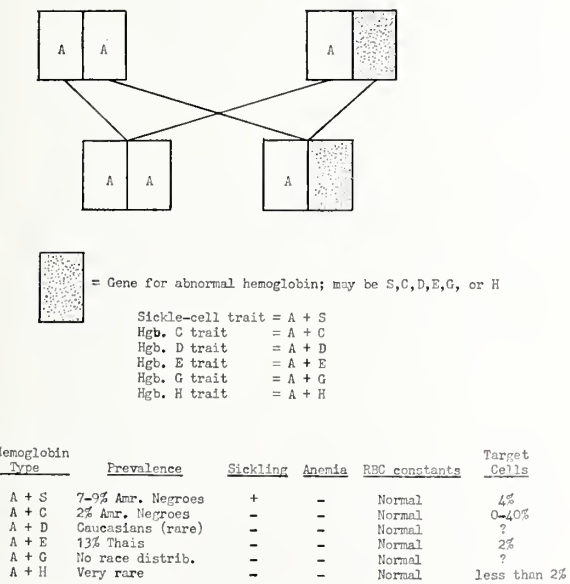


Figure 2. Hereditary aspects of heterozygous hemoglobin traits.

Sicklelemlia is the term used to denote the sickle-cell trait. This represents a heterozygous state for the hemoglobin S gene, as noted in Figure 3. This condition is demonstrated in about nine per cent of American Negroes, and in variable degrees (as high as 45 per cent) in African tribes. It has also been reported in India, Greece and Italy. There are no other hematologic abnormalities referable to the pathologic hemoglobin. The survival time of the red blood cells is physiologic (120 days), and trait-carriers can therefore serve safely as blood donors. Most of these persons remain asymptomatic, though some may tend to develop vascular occlusions, especially when engaged in mountain climbing, flying at high altitudes or engaging in other activities during which there is a decrease in available oxygen.

Sickle-cell anemia represents the homozygous state for the S hemoglobin, as represented in Figure 3. It is of interest to note also that hemoglobin F may be associated along with the S pigment in this syndrome, concentrations of the F pigment having been reported as constituting up to 24 per cent of the total hemoglobin. Approximately 0.2 per cent of American Negroes have sickle-cell anemia. Several excellent studies of this disease have appeared in the recent literature, notably the work of Scott and his associates.¹¹⁻¹³

The major hematologic feature most typically associated with this disease is the sickle-shaped red blood cells, as seen most clearly in the special "sickle-prep." This is a normochromic normocytic anemia which is hemolytic in nature. There is a markedly reduced red-cell survival time (15-60 days), and thus the syndrome is representative of an "intracorpuseular" hemolytic defect, inasmuch as normal red cells survive normally when trans-

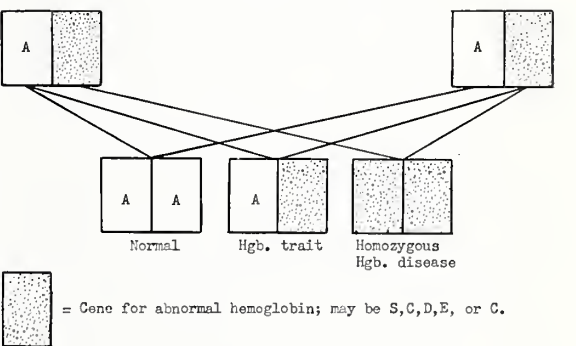


Figure 3. Hereditary aspects of homozygous hemoglobin diseases.

fused into the patient. Other hematologic features include erythroid hyperplasia of the bone marrow, increased reticulocyte count, hyperbilirubinemia without bilirubinuria, elevated hemolytic index, leukocytosis, thrombocytosis, decreased osmotic fragility of the red cells, and the demonstration of sickle cells, target cells, basophilic stippling, and irregularly nucleated red cells on the blood smear.

The symptomatology of sickle-cell anemia may involve almost any organ system as a sequela to the chronic hemolytic anemia or to vascular obstruction by the abnormally-shaped red cells, or a combination of both of these features. Scott and his associates¹¹⁻¹³ have tabulated the many conditions that must be differentiated from sickle-cell anemia, and have emphasized that it may mimic or simulate a number of other conditions such as rheumatic fever, infectious hepatitis, meningitis, nephritis, osteomyelitis, leukemia, typhoid fever, malaria, histoplasmosis, syphilis, acute "surgical" abdomen, skeletal disorders and other anemias.

Sickle-cell anemia patients are particularly prone to intercurrent infections. The use of antibiotics has increased the possible life expectancy of these patients to the fourth or fifth decade. Blood transfusions are indicated when the hemoglobin reaches low levels. Splenectomy is of no value unless splenic dysfunction leads to a superimposed thrombocytopenic purpura. The "abdominal crises" must be treated with analgesics and sedation. Recently, Priscoline® has been reported to be of value in these crises. Other complications are treated specifically. ACTH and cortisone serve no useful purpose. Scott and Kessler¹⁴ emphasize the emotional guidance that these patients and their parents require.

There are a number of variations of the sickle-cell trait which represent double heterozygous states. Hemoglobin C-sickle-cell disease has been reported by Singer in 17 cases,⁹ and in a later study Schell and McGinley,¹⁵ noting that 71 cases had been described, have added another of their own. Hematologically, these show either a compensated hemolytic process or a mild anemia. Sickle cells are scarce on the smears, but target cells may number up to 50 per cent. The MCV and MCH are normal or decreased, but the MCHC is normal. Reticulocytes are increased, and the red-cell life span is decreased. Many persons with this disease are unaware of its presence, but others may have findings as severe as those in sickle-cell anemia.

Hemoglobin S-thalassemia (microdrepanocytosis) is another double heterozygous state involving the hemoglobin S and thalassemia (hemoglobin F) genes. The features of sickle-cell or thalassemia disease may be seen. This is a microcytic hemolytic condition with a decreased MCV and MCH, and a normal or slightly decreased MCHC. The blood

smear shows the sickle cells to be fewer but the target cells more conspicuous than in sickle-cell disease. Clinically, the patients show all of the various stages between the severe features of sickle-cell disease and a completely asymptomatic state. These patients may be erroneously classified as having sickle-cell anemia if no electrophoretic analysis of hemoglobin is performed. This syndrome has been reported mostly in Greeks, Italians and American Negroes.

Hemoglobin D-sickle-cell disease is another variant reported in two unrelated families, both Caucasian. They showed a moderately severe hemolytic process.

HEMOGLOBIN C DISEASE

Hemoglobin C is frequently involved in hemolytic disorders. This abnormal hemoglobin was discovered by Itano and Neel in 1950.¹⁶ Target cells are almost regularly observed, but as previously noted, they are not specific for this abnormal pigment. The causative relationships between hemoglobin C and the cell shape are not understood.

Several conditions involving hemoglobin C have been recognized so far. The hemoglobin C trait represents the heterozygous state for the C gene. There are no hematologic abnormalities except variable degrees of leptocytosis which may be associated with decreased osmotic fragility. Most carriers are free of symptoms, though some may complain of intermittent arthralgia. The incidence of this trait is two or three per cent of American Negroes and up to 12 per cent of African ones.

Pure hemoglobin C disease has been reported in one white person of Italian extraction, but is more characteristic of Negroes, among whom the incidence is one in 6,000.¹⁷ Such patients show a compensated hemolytic process or a mild anemia. Leptocytosis is conspicuous, and there is a markedly decreased osmotic fragility. The red cell survival time is as low as five days. Even though splenomegaly reaches severe degrees, splenectomy does no good. These people often have episodes of bone and joint pain.

Hemoglobin C-thalassemia disease demonstrates a microcytic erythrocytosis, with decreased MCV and MCH and a normal MCHC. There is slight reticulocyte response, and again decreased osmotic fragility. Target cells may number 50 per cent. The patients do not demonstrate any enlargement of the spleen or liver.

HEMOGLOBIN E AND M DISEASES

Hemoglobin E has aroused considerable interest in Thailand, for in that country a relatively high incidence (12.5 per cent) of severe thalassemic syndromes have been reported in association with demonstration of this abnormal pigment by electrophoretic studies. Singer⁹ outlined three forms of occurrence: (a) hemoglobin A + E trait; (b)

pure hemoglobin E disease; and (c) hemoglobin E-thalassemia (F) disease. The pure hemoglobin E disease is characterized by demonstration of the abnormal pigment, microcytosis, numerous (25-60 per cent) target cells, and variable degrees of hepatosplenomegaly, arthralgia and jaundice. Hemoglobin E-thalassemia disease is clinically similar to thalassemia major, although somewhat milder, and the patients usually live to adulthood.

Recently, another abnormal hemoglobin has been described. Heck and Wolf¹⁸ described a case of chronic cyanosis as an expression of a chronic methemoglobinemia, with an abnormal hemoglobin referred to as hemoglobin M.

The other abnormal hemoglobins hold lesser significance to us in their clinical applications. However, it is necessary that we be aware of them. From the preceding discussion, it must be evident that we must reevaluate our concepts of the hemolytic anemias. It is clear that thalassemia syndromes may be associated not only with hemoglobin F but also with hemoglobins S, C and E. Delineation of these disorders can be made only by hemoglobin analyses such as are provided by paper electrophoresis. True, relatively few of these states will be encountered by the practitioner in any given locality, but yet in some places interest may be high for any one of the abnormal hemoglobins.

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Dr. Gundersen Asks Exams for Renewal of Medical Licenses

Dr. Gunnar Gundersen, president of the American Medical Association, told an audience of medical educators at a dinner meeting of the Congress on Medical Education and Licensure, in Chicago on February 9, that licensing bodies should require physicians to pass examinations periodically, as a means of making sure of the uniform excellence of medical care that the public has every right to expect. He went on to say that his suggestion should be considered immediately—not in 1965, 1975 or at some later date.

He said that in an era of rapid change, medical men must be required, rather than merely urged, to keep up with medical advances. It was apparent that he prefers reexamination as the technic for making them keep up-to-date, but he mentioned

two alternatives. First, he said, it could be made a requirement of licensing boards that license-holders present evidence of having participated in acceptable programs of postgraduate medical education, and pointed out that the developing activities of the AMA Council on Medical Education and Hospitals should make this approach feasible in the near future.

Second, Dr. Gundersen said, the stimulus could be a non-governmental function—i.e., the AMA and other organizations of doctors could make either reexamination or course-taking a prerequisite to physicians' keeping their membership. This idea would be patterned upon the present practice of the American Academy of General Practice.

Virus Disease in a General Population And a Comparison With The Incidence of Bacterial Disease

GEORGE E. MORRISSEY, M.D.

DAVENPORT

ON APRIL 1, 1956, I began a study of the incidence of non-bacterial infection of the town where I am a family doctor, and I carried it on for two years thereafter. Davenport, Iowa, is an industrial city of 83,000 in predominantly agricultural Scott County.

The purpose of the study was to observe and record the incidence of symptoms, so that I might gain a better understanding of the nature of virus infection as it affects persons under my care.

As the study continued, certain secondary purposes emerged:

1. Demonstration of the comparative incidence of bacterial and non-bacterial infection, and the experience of a practitioner that antibiotics can be withheld from a large number of febrile persons without disaster.

2. Graphic description of the influenza epidemic of 1957 as it developed and waned in and through a general population.

METHOD OF COLLECTING DATA

Figure 1 is a facsimile of my check sheet for May, 1956. The period covered by the check sheets extended from April 1, 1956, to April 1, 1958.

Entries represent person-to-person contacts and telephone calls directly to me.

The three-day interval between dates of reporting accommodated weekends and still provided a clear visual impression of when a disease reached its peak.

INTERPRETATION OF CHECK SHEETS

Common Cold. No entry was made for any person who had a "cold."

Bacterial Infections. No entry was made on the check sheets for any person given an antibiotic or chemotherapy. During the second year a separate record was kept of bacterial respiratory infections. That record will be introduced later in this paper.

There are entries for 1,725 persons.

Area and Sex. A few weeks after the start of the study, it appeared that the area of the city in which the disease had occurred and the patient's sex were not significant. These entries were dropped.

Age. Two or more ages in a single box indicate

that more than one member of a family were reported ill on the same day.

Sore Throat. This category reflects the complaint stated by the patient. Anatomically, it might represent an ailment of the nasopharynx, pharynx, larynx or trachea.

Fever. This represents a temperature of 100°F. by thermometer. Mothers who reported fever were often asked to call back after verifying their impression through the use of a thermometer.

Local Muscular Pain. This column was included because it had been my personal opinion that persons with pain in the neck, back, or intercostal muscles came in groups and that they often had associated respiratory symptoms. At the middle of this study, this symptom was dropped and replaced by *Abdominal Cramps* when the latter came to have epidemic significance.

Herpes. This represents herpes simplex and herpangina unless marked with a "Z" for zoster.

Rash. Checks in this column represent eruptions that could not be classified, but were obviously parts of systemic infectious diseases.

In some cases, either in retrospect or in association with other cases, a diagnosis of rubella was tenable. This has been indicated with an "R" check.

Measles and Chickenpox. The two years covered were not big years for measles or chickenpox. For the population studied, 1954 had been a very heavy measles year.

ANALYSIS OF CHECK SHEETS

General. A panoramic view of disease trends is provided through an arrangement of report sheets in vertical columns (Figure 2). The check marks ebb and flow between the upper-respiratory and lower-intestinal tract columns.

Although there was an overlap of symptoms among virus diseases that affect the respiratory tract, there was no overlap, in this population, of "flu" and "intestinal flu" during the period covered.

It appears that June is the healthiest month in this environment (Figure 3). The fact that I take a 10-day vacation in June may have something to do with that—one way or another.

SEX	AGE	SORE THROAT	FEVER	HEADACHE	GEN. ACHE	LOCAL MUSCLE	COUGH	CROUP	GLANDS	CONJUNCTIVA	HERPES	PLEURISY	VOMITING	DIARRHEA	RASH	MEASLES	CHICKEN POX	MUMPS	WHOOOP COUGH	DATE
M	3		✓		✓		✓	✓												5/1
M	1		✓					✓												
F	16						✓													
F	2																	✓		5/4
F	5		✓	✓		✓														5/7
M	25	✓	✓	✓	✓															
M	45	✓										✓	✓							
M	25	✓			✓															
F	80	✓			✓															
F	30												✓							
M	1												✓							
F	25		✓	✓	✓			✓							RUB					5/10
FM	3-25	✓✓	✓✓	✓✓					✓✓											
M	2		✓	✓	✓		✓													
F	5		✓									✓								5/13
F	6		✓		✓			✓		✓		✓								
F	25	✓	✓	✓	✓	✓														
M	2	✓	✓					✓				✓			RUB					
F	2	✓					✓	✓	✓					✓						
FF	1/2-5															✓✓				
MM	1-2		✓✓																	5/16
MF	2-5								✓✓											
M	1											✓								
M	14		✓	✓				✓												
M	7					✓		✓		✓										
M	16	✓	✓	✓		✓						✓								5/19
FM	3-5		✓✓	✓✓		✓✓			✓✓											
M	3		✓	✓	✓				✓											
F	40	✓																		
M	3		✓	✓								✓								
F	10														RUB					
FF	3-42		✓✓			✓✓	✓✓								✓✓					5/22
F	3												✓							
FF	1-6		✓✓										✓✓							
M	13					✓				✓		✓								5/25
M	19	✓						✓												
M	7																✓			
F	6	✓													✓					
F	15		✓	✓	✓		✓													
M	26											✓	✓							

Figure 1. Facsimile of a check sheet. Compare the scatter of symptoms here with the grouping in Figure 2.

The population studied may be divided conveniently into four age groups:

Pre-school	(0-5 yrs.)	686
School	(5-18 yrs.)	539
Employed persons and/or parents	(18-60 yrs.)	410
Elderly persons	(60 + yrs.)	90
		<hr/> 1,725

In this particular 18-60 yr. group, it is unusual to attend school after the age of 18 yrs., and not unusual to marry near that age.

The total of patients studied in 1956-1957 was 736; in 1957-1958 it was 989. The influenza epidemic of 1957 accounted for the increase (Figure 3).

THE INFLUENZA EPIDEMIC OF 1957

From mid-August through September, 1957, there was a definite increase in the headache-fever combination, but without increase in three-day case incidence.

At the end of the first week in October, the onset of the influenza epidemic proper could be seen. It was marked by general aching with the headache, and considerable increase in cough. At the same time, the three-day case incidence rose from an ordinary high of 7 or 8 to 47, 49, 43, and by October 26, to 68!

At the peak of the epidemic and during the drop-off, the emphasis, in symptoms, shifted from aching to cough.

With reference to case incidence, the epidemic had abated by the end of the first week in November. From the graphic evidence of the check sheets, it is apparent that the influenza epidemic ended completely with the onset of an epidemic of gas-

troenteritis that began in the first week in December (Figure 2).

In Figure 4, it can be seen that the three age groups chiefly affected reached their peaks of case incidence at about the same time. The pre-school children lagged a bit, presumably until their senior siblings could bring the bug home to them.

There were 327 persons affected during the one month of the epidemic proper. The age groupings were as follows:

0- 5 yrs.	78
5-18 yrs.	131
18-60 yrs.	105
60 + yrs.	13
	<hr/> 327

None of these persons was given an antibiotic.

The proportionate occurrence of symptoms is shown in Figure 5. Of these, the one memorable for the most bitter complaints was "headache."

There were two deaths that could be directly or indirectly attributed to influenza. Both occurred

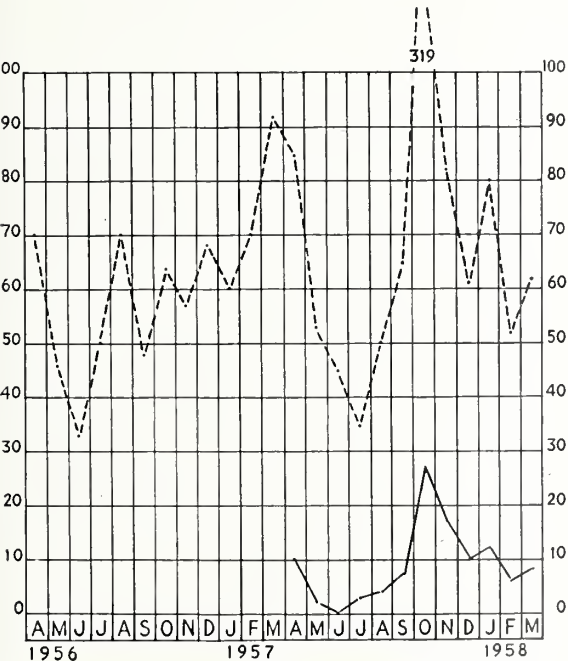


Figure 3. The broken line represents total cases, and the solid line represents pneumonia cases.

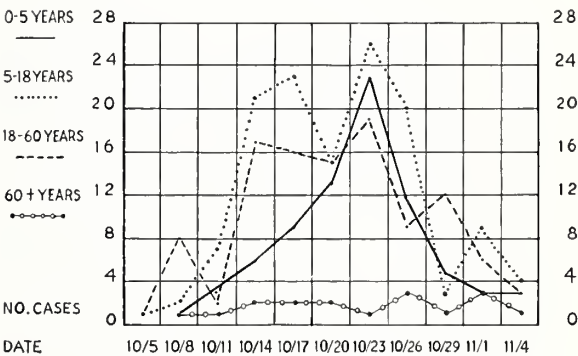


Figure 4. Progress of the flu epidemic by age groups.

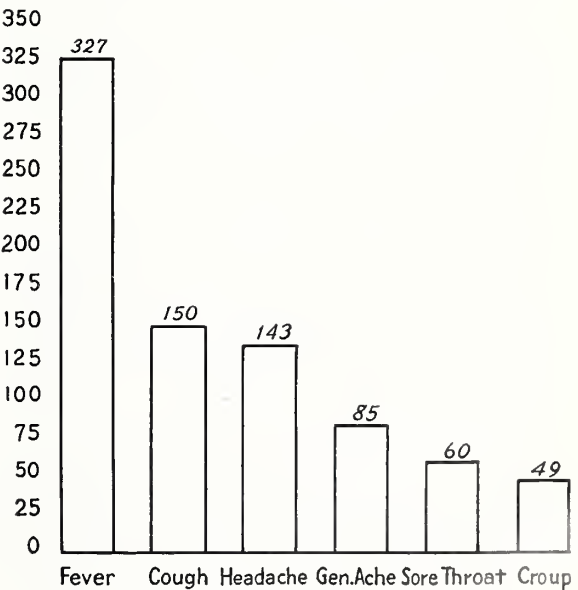


Figure 5. Symptoms of epidemic flu in 327 patients.

in elderly people, one of whom had pneumonia and the other was a cardiac.

PNEUMONIA AND THE INFLUENZA EPIDEMIC

Figure 3 shows that from April, 1957, to April, 1958, the incidence of pneumonia followed the total count of disease.

This graph also gives a good picture of the proportion of flu cases for which antibiotics were necessary.

There was only one death due to pneumonia during the epidemic, and that was in the 60 + group.

GASTROENTERITIS

Figure 6 shows the distribution by month of 450 cases of gastroenteritis. It is noteworthy that the traditional months of "summer diarrhea" were not the months of high incidence in this study.

LARYNGO-TRACHEO-BRONCHITIS

There were 71 cases in the first year and 152 in the second. The increase is not entirely accounted for by the flu epidemic.

There were 48 cases in October, 1957, compared to 9 in October, 1956, but November and December, 1957, and January, February and March, 1958, each showed an increase over the comparable month in the preceding year.

HERPES

The most important concentration of entries was between July 20 and August 17, 1956. There were 12 cases, all with fever but with no other consistent symptom. None of these were zoster.

Other groupings:

February 16—March 19, 1957	11 cases (4 zoster)
April 7—April 28, 1957	7 cases (2 zoster)
July 20—August 10, 1957	7 cases

CERVICAL GLANDS

Because palpable cervical glands are a frequent finding in normal children, this symptom was difficult to evaluate. Only 39 entries were made, and there was no constant grouping with other symptoms.

LOCALIZED MUSCLE PAIN

Between July 26 and August 16, 1956, there were 13 cases of pain involving shoulder girdle or neck muscles associated with general malaise, but not consistently with any other symptom. Between September 1 and October 1, 1956, there were 14 similar cases. Since there is no comparable grouping in a comparably short time, these 27 cases may be significant.

ABDOMINAL CRAMPS

This distressing symptom often occurred in patients who had neither vomiting nor diarrhea, but whose illness preceded, accompanied or followed an epidemic of gastroenteritis and may be considered to have been part of that epidemic.

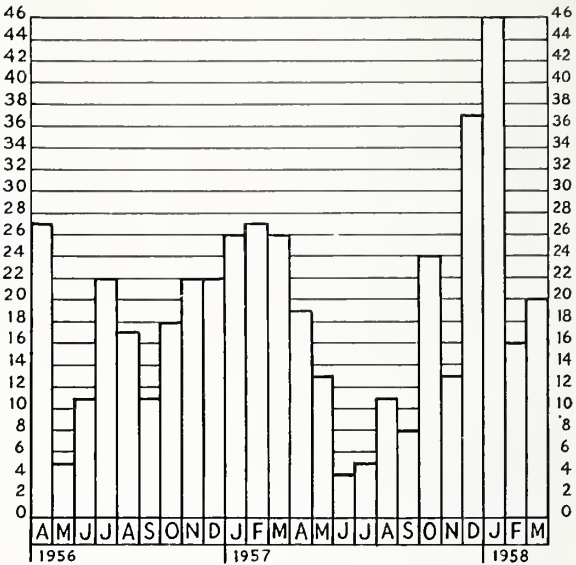


Figure 6. Gastro-enteritis cases by months.

CONJUNCTIVITIS

During April, May and June, 1957, there were 29 cases of conjunctivitis—the peak incidence during the two-year period. However, only the eight cases in June, 1957, were accompanied by other symptoms—in this case fever, headache and general aching.

PLEURISY

No epidemic of pleurodynia was encountered. There were only 16 cases of pleurisy in two years. There was no significant grouping.

COMPARATIVE INCIDENCE OF BACTERIAL AND NON-BACTERIAL INFECTIONS

For several years it had been my custom to withhold antibiotics unless an infection appeared to be bacterial. The previous establishment of that custom made it possible for me, during the second year of the study, to compare the incidences of bacterial and non-bacterial diseases by keeping a list upon which an entry was made every time an antibiotic or chemotherapeutic was administered or prescribed for an infection of the ear, nose, throat, cervical glands or lung.

Between April 1, 1957, and April 1, 1958, exclusive of measles, mumps, chickenpox, whooping cough and gastroenteritis, there were:

644 persons with temperatures of 100°F. or over who did not receive antibiotics

260 persons with bacterial disease of the ear, nose, throat, neck or lung who were treated with antibiotics.

The second treated group included:

Lung	121
Pharynx	71
Ears	46
Cervical glands	22
	<hr/>
	260

There were 163 persons with the complaint of "sore throat" who were not treated, and it is of great importance whether or not this population is being subjected to greater risk of rheumatic fever than is one in which all persons with sore throat are given penicillin.

During the past two years, there has been only one new case of rheumatic fever. It occurred in a young man who was treated, but only after treatment had been postponed for several days. (See also "Addendum" at the conclusion of this paper.)

All known rheumatic fever cases are on prophylactic treatment.

CONCLUSIONS

- 1. The population studied is at any given time experiencing an epidemic of some kind. The epidemic usually is "flu" or "intestinal flu."
- 2. Identification of virus disease depends upon diagnostic material obtained during an epidemic.

Keeping a check sheet on a general population could alert investigators and enable them to perceive groupings that aren't obvious when cases escape such comparison, and thus could facilitate efficient treatment.

3. It is possible to make discriminating use of antibiotics without undue loss of lives and without diminution of one's practice.

ADDENDUM

In July, 1957, a 14-year-old boy had been brought to me with a complaint of sore throat. In a complete examination that included a study of his skin, there were no positive findings.

His parents made no further effort to secure treatment from me, but took the boy to another doctor several days later when a rash developed. A throat culture for hemolytic strep was obtained.

This is the only known defection from the ranks for this period.

Intramuscular Iron for Pregnant Anemics

Three physicians at the Baylor University College of Medicine have reported that many "stub-born" cases of iron deficiency anemia among pregnant women can now be corrected with intramuscular iron, and some risky blood transfusions can thus be avoided.* They note that from 40 to 50 per cent of all gravidas develop iron-deficiency anemia to a greater or lesser degree. Blood transfusions used to replenish iron stores after other forms of treatment have failed "carry the risk of producing hepatitis, developing reactions from incompatibility, introducing infection, and causing other complications," they declare. At the same time, oral iron is often not tolerated by the gravid woman, and intravenous iron has certain disadvantages and risks that approach those of blood transfusion.

In their study of 50 women with anemia of pregnancy, the Baylor investigators found that intramuscular iron-dextran complex obviated the need for blood transfusions "in many of the patients who formerly would have required transfusions prior to delivery." They observed no skin rashes, fever, headaches, or muscle aches. The injected iron, they found, was picked up immediately from the injected site and from there was transported to the bone marrow. In a period of five days, it had been used in the formation of red blood cells.

The study group included 39 multigravidas and 11 primigravidas, and the overall mean age was 22.9 years. On the average, oral therapy had been given for 7.7 weeks before the administration of

intramuscular iron. The average number of injections per patient was 8.3, and the total iron injected averaged 1,310 mg. or 26.2 cc. per patient.

The three doctors report that a total of 1,000 mg. of iron must be mobilized—i.e., 500 mg. each for the fetus and for the red-cell increase.

They tabulate the iron stores for a 40-week gestation period as follows:

<i>Debit</i>	
500 mg.—red cell increase	
500 mg.—fetus	
150 mg.—blood loss at delivery	
—	
1,150 mg.	
<i>Credit</i>	
500 mg.—red cell decrease postpartum	
150 mg.—amenorrhea	
—	
650 mg.	
<i>Deficit</i>	
1,150 mg.	
—650 mg.	
—	
500 mg.+ 150 mg. for lactation = 650 mg.	

Thus, the investigators conclude, "Intramuscular iron is effective in iron-deficiency anemia. At times it is most definitely indicated and should be the treatment of choice; generally speaking, if the patient does not respond, it is not the fault of the drug but an error in diagnosis. Laboratory tests necessary to establish the etiology of the anemia are neither costly, time-consuming or painful." They used Imferon (Lakeside).

* McClanahan, H. L., Henderson, J. A., III, and Gready, T. G., Jr., Intramuscular iron therapy in anemia of pregnancy; report of 50 cases treated with intramuscular dextran-iron complex. *OBSTETRICS & GYNECOLOGY*, 12:439-446, (Oct.) 1958.

A Current Survey From The S.U.I. Bacteriology Diagnostic Laboratory

MARION JONES

IOWA CITY

THE BACTERIOLOGY Diagnostic Laboratory at S.U.I. receives and examines specimens from the 1,000-bed University Hospitals, including autopsy material which comprises 8.8 per cent of the total specimens. The Laboratory employs three full-time trained bacteriologists, plus a part-time person on night and emergency call, and is under the direct supervision of the faculty of the Department of Bacteriology.

A survey of the specimens received and the microorganisms isolated there during a one-year period has uncovered several interesting facts, and it seems that the information is of sufficient general interest to warrant review and comparison with previous data from the same Laboratory.

Many studies of the incidence of particular microorganisms in specific situations in healthy and infected human beings have been reported,¹⁻⁵ and antibiotic sensitivities have been studied with one or a few organisms,⁶⁻¹¹ the hemolytic *Staphylococcus aureus* receiving the greatest share of attention. Recently, a few publications^{5, 7, 9} have stressed the role of gram-negative rods in infec-

tions, and their possible relation to intensive antibiotic therapy.

TOTAL SPECIMENS

The specimens received at the S.U.I. Bacteriology Diagnostic Laboratory between August 12, 1957, and August 13, 1958, totaled 15,730, an increase of approximately 50 per cent over the number received in 1955. On the microorganisms isolated from those specimens, 23,082 antibiotic sensitivities were determined. Table 1 presents the data for types and numbers of specimens received during four-week periods throughout the year, and Figure 1 shows the incidence of the receipt of specimens. "Routine" cultures were performed with all specimens from the upper respiratory tract, urines, pus, tissue biopsies, spinal and ventricular fluids, and other body fluids. There were two peaks in the volume of specimens received, one in late October and early November at the time of the influenza epidemic, and a second and much larger one in April. All types of specimens followed essentially the same curve, with the exception of stool cultures, which were most numerous in the early fall, and guinea pig inoculations

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TABLE 1
TOTAL SPECIMENS RECEIVED DURING ONE YEAR

<i>4-week Periods Starting</i>	<i>Acidfast Smear Only</i>	<i>Guinea Pig Inoculation and Culture</i>	<i>Routine*</i>	<i>Fungus</i>	<i>Blood</i>	<i>Stool</i>	<i>Sterility</i>	<i>Sensitivity</i>	<i>Total Specimens</i>
Aug. 12	1	111	577	59	133	77	8	1,434	966
Sept. 9	7	83	660	43	146	71	9	1,526	1,019
Oct. 7	5	100	863	29	162	60	13	1,800	1,232
Nov. 4	16	100	739	52	125	67	20	1,637	1,119
Dec. 2	10	99	747	57	150	34	28	1,837	1,125
Dec. 30	10	76	733	69	161	68	20	1,577	1,137
Jan. 27	4	118	834	71	152	55	29	2,089	1,263
Feb. 24	23	101	866	82	228	43	46	1,816	1,389
Mar. 24	15	103	1,028	89	242	34	47	2,095	1,560
Apr. 21	21	98	916	76	205	44	50	1,817	1,410
May 19	29	90	807	74	159	67	28	1,610	1,260
June 16	7	76	726	52	136	42	28	1,952	1,068
July 14	15	96	772	63	164	42	30	1,892	1,182
Total	163	1,251	10,268	807	2,163	704	356	23,082	15,730

* Sputum, nose and throat swabs, urine, spinal fluid, pus, tissue biopsies, etc.

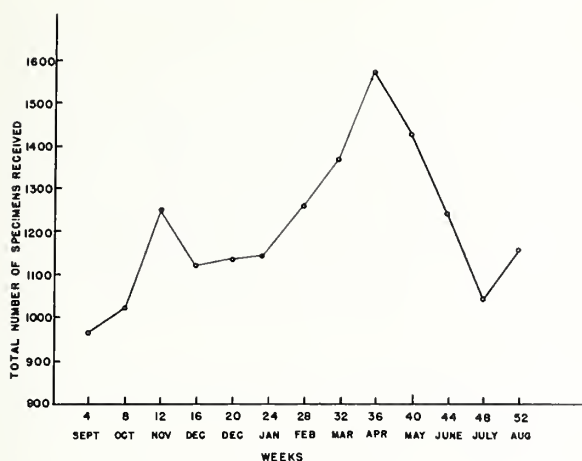


Figure 1

for tubercle bacilli, which showed no seasonal variations. Blood cultures were extremely numerous in April, but there was no comparable rise in the isolations of bacteria from such specimens.

EIGHT RANDOM WEEKLY SURVEYS OVER ONE YEAR

Specific data on the isolation of bacteria and fungi were collected for eight different weeks selected at random. These were one week each in October, November, January, March, April, May, June and July. Specimens from autopsies in the Department of Pathology were excluded because the yields of organisms from such specimens are not representative of their occurrence during life. Examinations for the tubercle bacillus and other bacteria of low incidence were excluded also, and will be examined in detail later for the entire year. The information in each instance included the type of specimen, the department from which it came, the incidence of isolation of specific organisms and the antibiotic sensitivities of the bacteria isolated.

On all specimens which are normally sterile, all microorganisms were tabulated. On specimens such as sputa and feces which have a normal flora, all organisms usually considered as pathogens and any organisms present in abnormal numbers (e.g., *Escherichia coli* in throats or *Pseudomonas* species in stools) were reported.

Procedures for isolation. Whole blood (5 to 10 ml.) was inoculated at the bedside into flasks containing 100 ml. of infusion broth containing 0.1 per cent para-amino benzoic acid (PABA), and incubation took place in an atmosphere of 10 per cent CO_2 for two weeks (four weeks for *Brucellae*) at 37°C .

Stools and rectal swabs were streaked directly on eosin-methylene blue agar and Salmonella-Shigella agar, and large inocula were placed in tetrathionate broth for restreaking after 18 to 24 hours. Specimens from all infants under one year of age and from older patients on request were

examined also for the presence of *Staphylococcus aureus*. Blood agar was used.

Urine specimens were inoculated directly onto blood agar, onto eosin-methylene blue agar, and into infusion broth containing para-amino benzoic acid.

Spinal and ventricular fluids were inoculated directly onto blood agar (one plate for anaerobic incubation, and one plate with a satellite *staphylococcus* for incubation in CO_2), and into infusion broth containing PABA. The fluid itself was also incubated.

Specimens from the upper respiratory tract and nearby areas (sinuses or ears), pus, and tissue biopsies were inoculated on blood agar. Whenever a gram negative rod was suspected, the specimen was also inoculated on eosin-methylene blue agar. Infusion broth was inoculated whenever the specimen came from an area normally sterile. Incubation was always anaerobic for at least 24 hours, followed by incubation in 10 per cent CO_2 for an additional two or three days.

Fungus specimens were placed on blood agar containing 50 micrograms of chloramphenicol per milliliter and incubated at 37°C . for four weeks inside plastic bags to reduce evaporation. These specimens were also inoculated on mycosel (BBL) and Sabouraud slants for incubation at room temperature for four weeks. Examinations were made at weekly intervals.

Specimens for strict anaerobes were inoculated onto blood agar and into deep meat broth.

Anaerobic atmospheres were obtained in all instances by placing the plates in glass desiccator jars, evacuating the jars twice to 640 mm. Hg. and filling with carbon dioxide, and after a third evacuation, introducing nitrogen gas to provide a final atmosphere of approximately 5 per cent CO_2 and 95 per cent N_2 . Special care must be taken to use gaseous nitrogen free from oxygen. In some cases, other specialized anaerobic methods have been used.

The culture medium for the tubercle bacillus during the last 10 months of this period was Peizer TB medium (Difco). Duplicate tubes were inoculated with concentrated specimens and incubated at 37°C . for six weeks. Guinea pigs were inoculated in the groin with concentrated specimens. The animals were autopsied and examined after six weeks, unless death occurred earlier.

Tabulation of positive cultures by specimen. Table 2 shows the occurrence of positive cultures during the eight weeks of study as tabulated by specimen. About one-half of the specimens yielded significant organisms (46 per cent). The lowest percentage isolation (less than 20 per cent) occurred in specimens which are normally sterile (e.g., blood, spinal fluids and pleural fluid). Stools were also found in this group. Over 80 per cent isolation of bacteria took place from pus and from urine specimens. In about one-fourth of the total

specimens, more than one organism of possible importance was isolated, and in many instances up to three or four organisms were present. How many and which ones of these were contributing to infection, it was impossible to determine. It must be emphasized, however, that this multiplicity of organisms was reported only when they were present in relatively large numbers and therefore considered of possible significance. Less than 10 per cent multiple occurrences of organisms were found in blood and stool specimens, spinal and pleural fluids, and bronchial aspirates. Dual or multiple occurrences were found in 30 per cent of the urine and pus samples.

The high incidence of organisms in pus can be explained by the fact that many specimens were from areas open to surface or intestinal-tract contaminations, burns, etc., and from patients on intensive antibiotic therapy in whom normally non-pathogenic organisms resistant to the antibiotics had overgrown or replaced the primary pathogens. However, the extremely large numbers of urines which yielded from two to four different organisms seem to be unusual. In this particular, there seems to have been a change from the situation of several years ago, when multiple occurrences of bacteria in urine specimens were rare. It is extremely difficult to assess the significance of the presence of these organisms, inasmuch as quantitative studies have not been carried out and are impractical for a routine laboratory.

Direct gram stains are of very little value in the identification of bacteria in urine because of the common occurrence of two or more gram-negative rods in the same specimen. Microscopically, no distinction can be made between them. The presence of bacteria in stains made directly from fresh urine specimens may be evidence for the presence of organisms in sufficient numbers to be significant in causing an infection. Different rates of growth

may obscure quantitative differences in the broth cultures, but are not pronounced on solid media, and both types of media are used routinely. Routine centrifugation of urines was not done, although natural sediments were generally used so that organisms of low incidence were not concentrated enough to appear on cultures. Methods of collection of urine specimens (even catheterization under the most scrupulous conditions) permit entrance of non-significant organisms from the surrounding areas. The incidences of organisms are not different in catheterized and voided specimens.

There is no marked seasonal variation in the occurrences of positive specimens of any type, and in general the curves parallel the total receipts of specimens.

Tabulation of positive cultures by clinical department. Table 3 contains data for the same eight weeks of study tabulated by clinical department contributing the specimens. Again, there is no evidence of any marked seasonal variation. As would be expected, the great majority of specimens (84 per cent) came from four departments: pediatrics, medicine, surgery and otolaryngology. The percentages of positive specimens are lowest from medicine and pediatrics (below 40 per cent) and highest from the surgical departments (60 per cent and above).

The occurrence of more than one significant organism is high in surgery, orthopedics, dermatology and gynecology. The figures here do not differentiate between infections which the patient developed in the hospital and those which he had at the time of his admission.

Tabulation of specific organisms by specimen. Table 4 shows that many species of organism occur from time to time, but during the eight weeks surveyed, not all of the species that have been isolated in this Laboratory were represented.

TABLE 2
RANDOM EIGHT-WEEK SURVEY DURING ONE YEAR
TABULATION BY TYPE OF SPECIMEN

Specimen	Total Specimens Received	Per Cent of Total Work	Total Positive Specimens	Per Cent of Specimens Positive	Total Organisms Isolated	Number of Specimens With Multiple Organisms	Per Cent Positive Specimens With Multiple Organisms	Average Number of Organisms Per Positive Specimen
Overall	1,783		822	46	1,071	192	23	1.3
Blood	279	15	47	17	48	1	2	1.0
Throat swab	350	20	133	38	147	14	10	1.1
Nasal swab	55	3	28	51	34	4	14	1.2
Sputum	150	8	72	48	91	16	22	1.3
Bronchial aspiration	68	4	27	40	29	2	7	1.1
Stool	144	8	23	16	23	1	4	1.0
Spinal fluid	138	8	15	11	16	1	7	1.0
Urine	170	10	140	83	201	48	34	1.4
Pus and tissue biopsy	394	20	323	82	465	102	31	1.4
Sinus washing	13	1	11	85	14	3	27	1.3
Pleural fluid	22	1	3	14	3	0	0	1.0

Some of the rarer organisms will be discussed later.

In the over-all figures, it can be seen that *Staphylococcus aureus* constituted one-fourth of the total organisms isolated, with *Escherichia coli* next most frequent (10 per cent). If the gram-negative rods (*Escherichia*, *paracolon*, *Aerobacter*, *Alcaligenes*, *Proteus* and *Pseudomonas*) are considered as a group, however, they represent one-third of the organisms isolated. Of all the organisms, only the beta hemolytic streptococcus, *Diplococcus*

pneumoniae and *Proteus* species showed any seasonal variations. They all occurred in higher proportions in the early spring than at other times during the year.

Staphylococci were most frequent in specimens from the upper respiratory tract (25-40 per cent), but how much of this occurrence represents true infection it is impossible to determine. It is known that a high carrier rate (20-50 per cent) exists in any hospital population, and in many specimens the organism undoubtedly represented the carrier

TABLE 3
RANDOM EIGHT-WEEK SURVEY DURING ONE YEAR
TABULATION BY CLINICAL DEPARTMENT

Department	Total Specimens Received	Per Cent of Total Work	Total Positive Specimens	Per Cent of Specimens Positive	Total Organisms Isolated	Number of Specimens With Multiple Organisms	Per Cent Positive Specimens With Multiple Organisms	Average Number of Organisms Per Positive Specimen
Overall	1,738		812	47	1,065	182	22	1.3
Pediatrics	553	32	191	35	231	32	16	1.2
Medicine	423	24	164	39	215	37	22	1.3
Surgery	306	18	183	60	275	59	32	1.6
Otolaryngology	180	10	119	60	147	20	17	1.2
Orthopedics	47	3	35	75	49	11	31	1.4
Urology	61	3.5	36	59	47	7	19	1.3
Dermatology	8	0.5	6	75	7	2	33	1.2
Gynecology	37	2	20	54	26	6	30	1.3
Nursery	46	2.5	19	41	20	1	5	1.0
Neurology	33	2	14	43	17	3	21	1.2
Other	44	2.5	25	57	31	4	16	1.2

TABLE 4
RANDOM EIGHT-WEEK SURVEY DURING ONE YEAR
TABULATION OF SPECIFIC ORGANISMS BY TYPE OF SPECIMEN

Specimen	Total Number Organisms		Per Cent of Total Organisms		Per Cent of Total Organisms																
					Hemolytic Staphylococcus Aureus	Staphylococcus Epidermidis	Micrococci	Beta Hemolytic Streptococci	Alpha Hemolytic Streptococci	Gamma Hemolytic Streptococci	Diplococcus Pneumoniae	Haemophilus Influenzae	Diphtheroids	Escherichia Coli	Paracolon	Aerobacter Aerogenes	Alcaligenes Faecalis	Proteus Vulgaris	Proteus Species	Pseudomonas Aeruginosa	Pseudomonas Species	Candida Albicans	Other
Overall	1,081		24	8	3	7	3	3	5	3	3	10	2	7	0.5	7	2	7	0.5	3	2
Blood	48	4	15	19	17	4	4	4	2	2	4	6	2	4		9	4				2
Throat swab	147	14	38			22			8	4		11	1	3	1	2		4	2	3	
Nasal swab	34	3	44			9			23	12		3		3				3		3	
Sinus washing	14	1	14	7		7	7		21	14						7		14	7		
Sputum	93	9	26			9			16	9		2	3	8		4	1	11		6	5
Bronchial aspiration	29	3	35			30			4	4		4		4		4		7		10	
Pleural fluid	3	0	33						33				33								
Stool	23	2	22											17						43	17
Spinal fluid	16	1	25	41			8							8		8					8
Urine	201	19	2	9	3	1	3	6				1	25	5	16	1	9	3	11	1	2
Pus, biopsy	473	44	27	10	3	4	6	4	3	2	5	6	2	4	1	8	2	7		1	2

state. It is impossible to determine by any known tests the virulence or pathogenicity of any one staphylococcus. It must be remembered that in specimens of this type (throat swabs, sputum, etc.), a few staphylococci are considered normal inhabitants and are not reported.

In specimens from other sources (e.g., stool, pus and urine), the presence of *S. aureus* is more strongly indicative of infection. The incidence of 22 per cent in stools may represent the emergence of staphylococci under antibiotic treatment. A search for staphylococci in stools is made on infants routinely, and on other patients only on special request. Thus, this figure gives no indication of total incidence. An extremely low incidence in urine specimens is noteworthy.

The presence of staphylococcus epidermidis in various specimens may or may not be significant. Since it is a normal inhabitant of the skin and mucous membranes, it can readily contaminate specimens. However, when isolated in pure culture from the same patient in several specimens, it must be considered significant. This is particularly true in spinal fluids and blood.

Micrococci are rarely to be considered significant unless found repeatedly. The same can be said of diphtheroids.

As expected, beta hemolytic streptococci were found mainly in the upper respiratory tract. They were isolated only rarely from septicemias, wounds or burns. No grouping or typing is done routinely.

Alpha hemolytic streptococci occur as pathogens in cases of subacute bacterial endocarditis, otitis

media, and dental root or jaw abscesses. In throat cultures, sputum and bronchial aspirations, these organisms are considered normal inhabitants. Gamma streptococci, or non-hemolytic streptococci, occur relatively often in infections of the urinary tract. No attempt is made to determine species.

Diplococcus pneumoniae occurred in sputum from pneumonia patients and in specimens from the upper respiratory tract during the influenza outbreak, and during the spring peak of infections. Occasional otitis media specimens yielded the pneumococcus.

Haemophilus influenzae represented a small proportion of the total, being found almost exclusively in upper-respiratory-tract or middle-ear infections. In our eight-week series, no cases of meningitis due to *H. influenzae* were seen, but cases do occur a few times each year. The isolated organisms are typed on special request.

As is expected, *Escherichia coli* had its highest incidence in urinary tract infections. Surprisingly, however, it also occurred in 11 per cent of throats in large numbers, even in nearly pure culture on many specimens. The occurrence of the pathogenic serotypes in stools of infants will be discussed later.

Aerobacter aerogenes. This, of course, is a common invader of the urinary tract. On the basis of the mouse pathogenicity tests, it is also prevalent in the upper respiratory tract, whereas organisms identified as *Klebsiellae* occur only rarely.

Proteus strains which yield swarming colonies

TABLE 5
RANDOM EIGHT-WEEK SURVEY DURING ONE YEAR
TABULATION OF SPECIFIC ORGANISMS BY CLINICAL DEPARTMENT

Department	Total Number of Organisms Per Cent of Total Organisms		Per Cent of Total Organisms																		
			Hemolytic Staphylococcus Aureus	Staphylococcus Epidermidis	Micrococci	Beta Hemolytic Streptococci	Alpha Hemolytic Streptococci	Gamma Hemolytic Streptococci	Diplococcus Pneumoniae	Haemophilus Influenzae	Diphtheroids	Escherichia Coli	Paracolon	Aerobacter Aerogenes	Alcaligenes Faecalis	Proteus Vulgaris	Proteus Species	Pseudomonas Aeruginosa	Pseudomonas Species	Candida Albicans	Other
Overall	1,062		24	8	2.5	7	3	3	5	3	2.5	10	2	6	1	6	2	7	1	2	2
Pediatrics	232	22	29	10	3	9	3	2	7	3	2	12	1	3		2	1	6	2	3	2
Medicine	216	20	18	4	3	8	2	4	8	4	2	12	4	6	1	4	5	6	1	6	2
Surgery	275	26	30	4	1	4	4	5	2	1	3	9	3	8	1	10	3	8			3
Otolaryngology	142	13	19	11	4	13	5	1	11	8	4	1	1	3	1	6		10	1	1	1
Orthopedics	49	5	41	6		8	2	2			6	4	6	6	4	4	2	4	2		2
Urology	47	4	15	13	2	2		2			17	2	13			11	2	15	2	2	2
Dermatology	8	1	12	50		12					12							12			
Gynecology	25	2	8	8	8	4		4			24		24	4	12			4			
Nursery	20	2	25	20	5	10	5				5	20					5	5			
Neurology	17	2	12	12	6	6	6					6		18		12	6	6			12
Other	32	3	12	12		6	12	3	12	3	3	6		6	3	12		3			3

are tabulated as *P. vulgaris*, and no attempt is made to distinguish *P. vulgaris* from *P. mirabilis*. Non-swarming strains are listed as species of *Proteus*. *Proteus* strains occur in blood specimens (9 per cent), as next most numerous to staphylococci. In urines, *Proteus* and other bacteria are commonly mixed.

Pseudomonas aeruginosa occurs in a surprisingly large percentage of specimens from the upper respiratory tract, as well as in urines and pus. When found in stools in pure culture, this organism must be significant as a pathogen.

Although not listed separately in this eight-week survey, organisms belonging to the following genera were isolated occasionally: *Neisseria*, *Brucella*, *Salmonella*, *Shigella*, *Klebsiella*, *Bacteroides*, *Corynebacterium*, *Clostridium*.

Of the pathogenic fungi, *Candida albicans* is the only one found frequently, and it comprised three per cent of the total organisms found in this survey. It is considered significant in either respiratory tract or gastrointestinal tract specimens only when present in large numbers, since the carrier state may exist. It was isolated in pure culture on several occasions from one case of otitis media. Intensive and prolonged antibiotic treatment often results in the appearance of this yeast in large numbers.

Tabulation of specific organisms by clinical department. From a summary of the occurrences of specific organisms by clinical department during the eight randomly-selected weeks (Table 5), it

can be seen that no one department contributed dramatically large numbers of any one organism. However, as would be expected, specimens from patients in the Department of Otolaryngology contributed large numbers of *H. influenzae*, *D. pneumoniae* and beta hemolytic streptococci, whereas many *E. coli* and other gram-negative rods came from patients in the Department of Urology.

ANTIBIOTIC SENSITIVITY TESTS

These were made on 741 of the organisms isolated during the eight weeks (Table 6). They were done only when requested, and on pure cultures of organisms after isolations. Two types of testing procedures were used, depending on the volume of work and on the organisms concerned. When many sensitivities are to be determined daily, the antibiotic is added directly to blood agar and is poured into plates in low and high concentrations. A battery of such plates can then be inoculated with a large number of organisms. With spreading organisms and when the volume of work is small, commercially prepared discs are used on the surface of blood agar plates.

A comparison between the percentages of resistant bacteria in this Laboratory in 1954-1956¹² and the present revealed increased resistance of (1) non-hemolytic streptococci and pneumococci to penicillin; (2) of *Aerobacter* to streptomycin; (3) of staphylococci, alpha hemolytic streptococci and paracolon to chloramphenicol; (4) of staphylococci to erythromycin; and (5) of paracolon and *Proteus*

TABLE 6
RANDOM EIGHT-WEEK SURVEY DURING ONE YEAR
ANTIBIOTIC RESISTANCE OF SPECIFIC ORGANISMS

		Per cent of organisms resistant to higher level of antibiotic								
	Total Number of Culture Strains	Penicillin	Streptomycin	Tetracycline	Chloramphenicol	Erythromycin	Albamylin	Furadantin	Neomycin	Polymycin
Hemolytic <i>Staphylococcus aureus</i>	202	81	60	60	10 ^{+0†}	30 ⁺²⁰	0	0*	0*	100*
<i>Staphylococcus epidermidis</i>	62	68	39	34	24	23	0	0		
Micrococci	17	44	47	53	35	29	0*	0	0*	100*
Beta hemolytic streptococci	53	2	13	6	0	100*		33*		
Alpha hemolytic streptococci	29	11	10	14 ⁻¹⁰	7 ⁺⁵			0*		
Gamma hemolytic streptococci	31	23 ⁺¹⁰	61	40 ⁻¹⁰	0	0*		0		
<i>Diplococcus pneumoniae</i>	37	11 ⁺⁸	0	0	0		0*			
<i>Escherichia coli</i>	81		30	25 ⁻²⁰	5			0	0	25*
Paracolon	17		53	68	39 ⁺¹⁵	0*		29 ⁺¹⁵	0*	60*
<i>Aerobacter aeruginosa</i>	57		49 ⁻¹⁰	42 ⁻³⁵	12 ⁻⁸			11 ⁻²⁰	0*	0*
<i>Alcaligenes faecalis</i>	8		25 ⁻⁵⁵	12 ⁻⁰⁰	25 ⁻²⁵			50*		
<i>Proteus vulgaris</i>	60		35	80 ⁻²⁰	17			6 ⁺⁵	0*	100*
<i>Proteus species</i>	14		67	54 ⁻³⁰	38 ⁻¹⁰			50 ⁺²⁵	0*	100*
<i>Pseudomonas aeruginosa</i>	68		78	97	95			100	41	15
<i>Pseudomonas species</i>	5		60*	100*	80*	0*			33*	0*

* Five or less strains. † Plus and minus figures are changes over values from same laboratory in 1954-56.¹²

to furadantin. An apparent decrease of resistance of many organisms to tetracycline may represent the change from Aureomycin to tetracycline as the test antibiotic, and should not be construed as a reduction of sensitivity. Values for these changes are presented in Table 6. *Haemophilus influenzae* has been found resistant to penicillin only.

Sensitivity tests are carried out at about one and a half or two times the rate at which they were performed in 1954-1956 with the following bacteria: hemolytic *Staphylococcus aureus*, beta hemolytic streptococcus, pneumococcus, *Proteus* and *Pseudomonas*. This increase may reflect either an increase in the number of infections or an increase in the number of requests for sensitivity testing.

Predictions of antibiotic sensitivity can be made for certain bacteria with reasonable accuracy (e.g., beta streptococcus, pneumococcus, *Haemophilus*

influenzae and *Pseudomonas*), but in most instances each organism must be tested with several antibiotics, and even then, clinical trial gives the final verdict.

Comparisons between our figures for antibiotic resistance and those reported in the literature^{6, 7, 9, 10, 14, 15} show wide variations in a few instances, and surprising correlations in others (Table 7). It would appear that time, type of patient, geographic location, duration of exposure to antibiotics and total number of organisms examined all contribute to the variations.

ORGANISMS OF LOW INCIDENCE

Records have been kept throughout the entire year on certain organisms that occurred in low incidences.

Salmonella. Species of the genus *Salmonella* were isolated nine times during the year covered

TABLE 7
COMPARISONS OF ANTIBIOTIC RESISTANCES

Organism	Author*	Per Cent Resistant to					
		Penicillin	Streptomycin	Tetracycline	Chloramphenicol	Erythromycin	Furadantin
Staphylococcus aureus	—	81	60	60	10	30	0
	Waisbren ⁶	75	65	52	12	23	18
	Roy <i>et al.</i> ¹⁰	65	40	39	4	8	5
	Djurišić and Drndarski ¹⁴	69	71	22-46	0.85	0	
	Winblad ¹⁵	53	53	33	21		
Beta hemolytic streptococcus	—	2	13	6	0		
	Roy <i>et al.</i> ¹⁰	0	80	0	0		
Diplococcus pneumoniae	—	11	0	0	0		
	Roy <i>et al.</i> ¹⁰	0	80	0	0		
Haemophilus influenzae	—		0	0	0		
	Roy <i>et al.</i> ¹⁰	50	6	0	0		
Escherichia coli	—		30	25	5		
	Roy <i>et al.</i> ¹⁰		15		1		
	Talbot <i>et al.</i> ⁹	80	12	5	3		
	Borman and Reilly ¹⁶		5	28	12		
Aerobacter species	—		49	42	12		
	Talbot <i>et al.</i> ⁹		90	0	65		
	Borman and Reilly ¹⁶		76	76	68		
Proteus species	—		35	80	17		
	Roy <i>et al.</i> ¹⁰		18	95	12		
	Eisenberg <i>et al.</i> ⁷		76	94	83		70
	Borman and Reilly ¹⁶	100	23	99	34		10
Pseudomonas species	—		78	97	95		
	Roy <i>et al.</i> ¹⁰		80	80	70		
	Borman and Reilly ¹⁶		81	51	89		

* The first figures in each set are taken from Table 6.

by the study. *Salmonella typhosa* was identified from bile and gallstones, but never from feces, of a carrier treated by surgical removal of the gallbladder. Other strains were isolated three times from stools only, and five times from blood and stools. One case of generalized salmonellosis yielded the organisms from blood, stool, spinal fluid, bone marrow and brain abscess. In general, these strains were susceptible to streptomycin, tetracycline and chloramphenicol.

Pathogenic serotypes of Escherichia coli. These were isolated from the stools of 16 infants—D127:B8 found 13 times; D26:B6 twice; and D111:B4 once. There was no epidemic outbreak of diarrhea, and these isolations were made about evenly throughout the year.

Fungi. Fungus isolations other than *Candida* species are rare enough to be recorded separately. *Aspergillus* species were found on five occasions from cases of otitis and were considered significant. In only one specimen, however, was the mold found without the concomitant or previous presence of a bacterial organism.

Sporotrichum schenckii was isolated once from a biopsy specimen of a node in the arm.

Nocardia asteroides was isolated from the lung of a patient dying of proteinosis.* A causal relationship here is questionable, yet *Nocardia* has

been isolated in a number of cases of this rare disease.

Histoplasma capsulatum was isolated from one patient from specimens of blood and bone marrow.

In addition, an as yet unidentified fungus has been isolated from a corneal ulcer.

Mycobacterium tuberculosis. Tabulation of specimens for *Mycobacterium tuberculosis* is presented separately in Table 8. Both culture and animal inoculation are important for the determination of the tubercle bacillus. If cultures alone were done, 24 per cent of positive specimens would have been called negative. On the other hand, eight of 13 positive cultures (guinea pigs all negative from original specimens) proved non-pathogenic to guinea pigs and could have been reported falsely as positive for tubercle bacilli.

In those specimens from which *Mycobacterium tuberculosis* was isolated and in which direct acid-fast smears were examined, half of the smears had been positive for acid-fast rods. In this same length of time, however, one-sixth of the positive smears were from specimens which did not yield the tubercle bacillus on culture or animal inoculation. This demonstrates again the value of determining the pathogenicity of the organism.

A previous study from this Laboratory, covering the years 1948-1954, inclusive,¹³ showed an isolation rate of 6.5 per cent on the basis of culture and animal pathogenicity tests. Thirty-five

TABLE 8
SPECIMENS POSITIVE FOR MYCOBACTERIUM TUBERCULOSIS
BY MEDIUM AND GUINEA PIG INOCULATION DURING ONE YEAR

Specimen	Total Specimens	Culture Positive, Guinea Pig Positive	Culture Positive, Guinea Pig Negative (Second Guinea Pig Positive)*	Culture Negative, Guinea Pig Positive†	Total Specimens Positive for Tubercle Bacilli	Per Cent of Specimens Positive
Sputum	334	19	3	8	30	9.0
Gastric aspiration	147	9	1	3	13	8.9
Pleural fluid	81	3		2	5	6.2
Bronchial aspiration	277	4		1	5	1.8
Pus	49	8		1	9	18.3
Tissue biopsy	89	6	1	1	8	9.0
Pericardial fluid	4	1			1	25.0
Urine	215			2	2	0.93
Spinal fluid	78	1			1	1.3
Joint fluid	7					0
Ascitic fluid	9					0
Stool	6					0
Bone marrow	7					0
	1,303	51	5	18	74	5.7
		69% of positives	7% of positives	24% of positives		

* Eight other positive cultures were non-pathogenic for guinea pigs.
† When animals demonstrated an enlarged inguinal node but no other pathology, the node was inoculated into another guinea pig. If the second animal also showed only a node, the specimen was not reported as positive for *M. tuberculosis*. Of 7 nodes inoculated back into animals, only 5 yielded animals with typical systemic infection.

per cent of positive diagnoses would have been missed had animal inoculation not been used.

VIROLOGICAL SPECIMENS

Few diagnostic laboratories are highly proficient in the isolation and study of all viruses causing human illness. The greatest proficiency usually exists in laboratories engaged in research on a given group of viruses. In the Department of Bacteriology at Iowa, Dr. Albert P. McKee is engaged in research primarily on the respiratory group of viruses, but other viruses are also studied on a limited scale. During the past year approximately 200 specimens were received and examined from patients in University Hospitals and around the state.

SUMMARY

A study has been made of specimens received in the State University of Iowa Bacteriology Diagnostic Laboratory for a one-year period. An eight-week random survey of specific organisms has been reported, and the types of specimens, the clinical departments from which they came and their antibiotic resistances have been tabulated and discussed. Organisms of less common occurrence have been tabulated for the entire year.

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"The Vanishing American"

Doctors as well as other people who have seen an average number of television Westerns and haven't visited any reservations lately may have the mistaken notion that the red man is as nearly extinct as is the bald eagle. Actually, however, it is estimated that there were 800,000 Indians at the time of Columbus within the territory that is now the United States, and there are at present no fewer than 500,000 of them, three out of five of whom live on reservations.

Of course one can't say that Indians are flourishing in this country, either from a medical or a financial standpoint, despite the costly programs that the federal government has undertaken for their benefit throughout the past century. According to an article in the February 10 issue of *THE WALL STREET JOURNAL*, the Indian's life span is only about 40 years, in contrast to 61 years for American whites, and the death rates from pneumonia, tuberculosis and influenza among Indians are between three and six times the national average.

In the past 60 years, federal expenditures for Indians have totaled \$2,000,000,000, and the 1959-1960 federal budget contains \$117,000,000 for them.

The newspaper facilitated an interesting comparison of per capita costs by pointing out that \$117,000,000 amounts to \$390 for each Indian on a reservation, whereas the federal farm program amounts to \$285 per farm resident, and the U. S. foreign-aid outlay in Viet Nam, a spot where such expenditures are unusually heavy, amount to about \$19 per person.

In its efforts to make the Indian self-supporting, the government has distributed land, most of which has since become the subject of inheritance litigations; it has donated cattle, without discernible benefits; and it has moved Indians to the cities at a per family cost of about \$750, but only half or three-quarters of them have stayed, and not all of them have become self-sustaining. Most recently, it has begun encouraging the establishment of industries on the reservations. The ineffectuality of the government's efforts at Indian education is shown by two facts: (1) The average adult Indian has had only five years of school. (2) Of such tribes as the Navajos, the Florida Seminoles and the Mississippi Choctaws, 90 per cent are illiterate.

State University of Iowa College of Medicine

Clinical Pathologic Conference

SUMMARY OF CLINICAL FINDINGS

A 69-YEAR-OLD widow was first seen at University Hospitals, Iowa City, three years before her death, complaining of bony pain in the back, neck and left shoulder. She had lost 13 lbs. A radical mastectomy for carcinoma had been done eight years before admission. A pathological fracture of the left humerus had occurred five years before admission and had been followed by five years of male-hormone therapy.

The patient was chronically ill, ambulatory, apprehensive and tense. There were signs of masculinization—hirsutism, acne and frontal alopecia. A soft-tissue mass was conspicuous over the frontal bone. Her weight was 102 lbs.

The routine laboratory data were unremarkable, and the electrocardiogram was normal. Radiographs showed an ossified hematoma of the frontal bone adjacent to the soft-tissue mass, and beneath this was an osteolytic destructive process.

After being treated with 1,500 roentgens and stilbestrol for two weeks, the patient worsened, and a destructive osteolytic process enlarged rapidly in the pelvis. She also developed syncopal attacks. The urinary calcium excretion was 294 mg. in 24 hours, and the blood calcium was 8.8 mg. per cent, the phosphorus 2.8 mg. per cent and the alkaline phosphatase 4.8 Bodansky units. A vaginal smear showed some estrogen effect.

After two months of testosterone, she made remarkable improvement. She was up and about, whereas she had been bedfast while taking stilbestrol. Her calcium excretion was 197 mg. in 24 hours, and the blood determinations were essentially as previously described. More destruction of D1, 2, 3 and 4 was apparent on x-ray films of the spine.

Two years and 10 months prior to the patient's death, a bilateral adrenalectomy was performed. Numerous firm nodules 1-2 mm. across were encountered on the pleura, but were not biopsied. On the tenth postoperative day, the urinary calcium excretion was 52 mg. in 24 hours, with 725 ml. of urine. The patient's pain was dramatically relieved, she was ambulatory and she was discharged on the thirteenth postoperative day on a maintenance dose of 37.5 mg. of oral cortisone in divided increments, plus additional sodium chloride.

For the next 25 months she did well. The radiographs demonstrated sclerosis of the destructive process, and her pain was at "a 25 per cent level." She had some euphoria. The 17-ketosteroid level was 5.6 mg. per gram of urinary creatinine, the

vaginal smear was castrate type and the calcium excretion was 208 mg. in 24 hours.

Eleven weeks prior to her death and 32 months after her adrenalectomy, she was hypophysectomized because of shoulder pain and other evidence of progressive disease. She was considerably obtunded postoperatively. Pain was relieved. Diabetes insipidus was present. The postoperative 17-ketosteroid determinations showed 3.46 mg. per gram of urinary creatinine, and gonadotrophins were present in the urine. On the fifteenth postoperative day, the I_{131} -uptake was 8 per cent and 5 per cent in four and 24 hours, respectively. Thyroid extract was started.

As time progressed, bed rest became a necessity. A distinctly new pain over the chest and arm developed, starting between the scapulae and radiating around the chest, especially to the right and down both arms. This was relieved by a sublingual medication.

The patient began to vomit, and the abdomen became slightly distended, without signs of peritoneal irritability. She died 11 years after the first attempt to cure the primary mammary carcinoma.

SUMMARY OF CLINICAL DISCUSSION

Dr. R. C. Hickey, Surgery: Today's conference deals with the hormonal control of disseminated breast cancer. The protocol relates the latter part of the life history of an elderly woman with mammary carcinoma. She had many surgical procedures—mastectomy, numerous biopsies, adrenalectomy and hypophysectomy. I shall tell you something about this woman, and in doing so I shall add to the abstract from time to time.

This 69-year-old woman came to Iowa City first in 1955, three years prior to her death. She was complaining of bone pain in her back, neck and shoulders. She had lost 13 lbs., and she related, first, that she had had a radical mastectomy for mammary carcinoma eight years previously; second, that she then had had a pathologic fracture in 1950, five years before we saw her; and third, that she was then treated beneficially through the use of male hormone. In 1955, she was chronically ill, but was able to walk about. Yet, she was apprehensive and tense.

At that time there was a large and conspicuous mass over the frontal bone as a secondary manifestation of mammary cancer, involving both the bone and the soft tissue.

Routine laboratory examinations were within normal limits. Other anatomic radiographic examinations showed other osteolytic lesions. She

was treated first for the relief of pain by focal x-ray, and since her age was 69, she was started upon stilbestrol for a short period of time. She worsened considerably. Following this therapy, she had "black-out" spells, and the urinary calcium was somewhat elevated. The blood calcium was within normal limits, but I must point out that these clinical determinations were made after she was taken off stilbestrol. We tried male hormone again, and she improved for a short period of time. But then she deteriorated again, and a bilateral adrenalectomy was performed.

At the time of adrenalectomy, there were numerous soft-tissue nodules upon the lung, but these were not biopsied. The calcium level, which had been elevated preoperatively, fell on the tenth postoperative day to 52 mg. in 24 hours. Her pain was dramatically relieved following the adrenalectomy. She was maintained on 37.5 mg. of cortisone in divided doses, and she was sent home on the thirteenth day.

The patient did very well for about two years. She had one episode of Addisonian crisis following a minor illness. Her 17-ketosteroid level when we saw her again was 5.6 mg. per gram of creatinine, where formerly it had been about 12. Also, she had a castrate type of vaginal smear, whereas formerly it was not. The mass on the forehead had become smaller, and she no longer had pain.

Figure 1 is a series of radiographs of her head. In the upper left, you can see a condensed area, a very dense one which represents sclerosis, and the soft-tissue mass adjacent to it is a lytic lesion. The picture at the upper right, taken five months later, shows that the lytic lesion gradually enlarged. One year after the adrenalectomy (picture at the lower left), it was closing in, and two years later (lower right), further healing was evident. A series of radiographs of the pelvis showed a similar sequence of bony changes.

The patient's clinical condition deteriorated rather markedly, and for that reason, 32 months after the adrenalectomy, a hypophysectomy was decided upon. Postoperatively, this woman was very obtunded, but her pain did appear to have been relieved. The hypophysectomy had been performed chiefly because of her pain. She did develop a diabetes insipidus, and I think I should comment briefly on it. She had a high specific gravity preoperatively and a relatively low urinary output. Following the hypophysectomy, she had a high urinary output of water and a very low specific gravity, and on the second day she developed an intermediate phase of the diabetes insipidus with a relatively high specific gravity and low output, and ended with a relatively low specific gravity and relatively high output.

Following the hypophysectomy, the patient did well. She had one episode which was probably due to an Addisonian crisis, and on the fourteenth postoperative day it was noted that her iodine uptake

was about five per cent in 24 hours, whereas preoperatively it had been essentially normal. At that time, she began to have difficulties, and fasting blood sugars were noted to be in the range of 57, 55, 54 and 42 mg. per cent on repeated examinations. This persisted, despite variable doses of cortisone. Finally, this did appear to be relieved when we fractionated the cortisone and gave some of it intramuscularly as well as orally, with an increased dosage. Also, we fractionated the food that she was receiving. During that period, the electrolytes were normal, and the blood urea nitrogen and creatinine were at normal levels, but vomiting was a problem, and food appeared to be absorbed poorly.

The patient had an unexplained episode of cyanosis 3½ weeks after the operation. Her face, neck and upper thorax were involved, and pulse and respiratory rates were increased, but there was no peripheral edema, and the lungs were clear. The liver was not enlarged. At five weeks, she was transferred to the rehabilitation unit. She was cooperative and alert, but very, very weak. Upon being transferred, she exhibited a soft apical systolic cardiac murmur for the first time. No examiner mentioned it again. At that time, her urinary 17-ketosteroids were 13.4 mg. per gram of creatinine, and she had a low gonadotrophin level.

Under direct observation seven weeks postoperatively, she was seen having an episode of extreme breathlessness upon walking across the room. Her pulse rate increased, she had distended neck veins and she had an enlarged and tender liver, but her lungs appeared clear, and the radiograph of her chest taken at that time was normal. A fingertip blood sugar was 93 mg. per cent, although hypoglycemia had been a problem.

As time progressed, bed rest became a necessity. Then, a new and interesting type of pain developed, going down both arms, radiating from the mid-portion of her back, but this appeared to be relieved by a sublingual type of medicant. Then this woman, 11 weeks after her hypophysectomy, began to vomit. The abdomen became distended, seemingly, but there were no signs of peritoneal irritation. She then died, 11 weeks after the hypophysectomy, 34 months after the adrenalectomy, eight years after the first signs of incurable cancer and 11 years after the first attempt to cure the cancer.

Dr. Perret, would you tell us why you did the hypophysectomy, and how the operation is performed?

Dr. G. E. Perret, *Surgery*: I want first briefly to remind you where the hypophysis is. It lies in the sella turcica about 10 to 12 cm. posterior to the frontal sinus along the floor of the anterior cranial fossa.

Why did we do a hypophysectomy in this patient? During the past few years, neurosurgeons have been much interested in the problem of re-

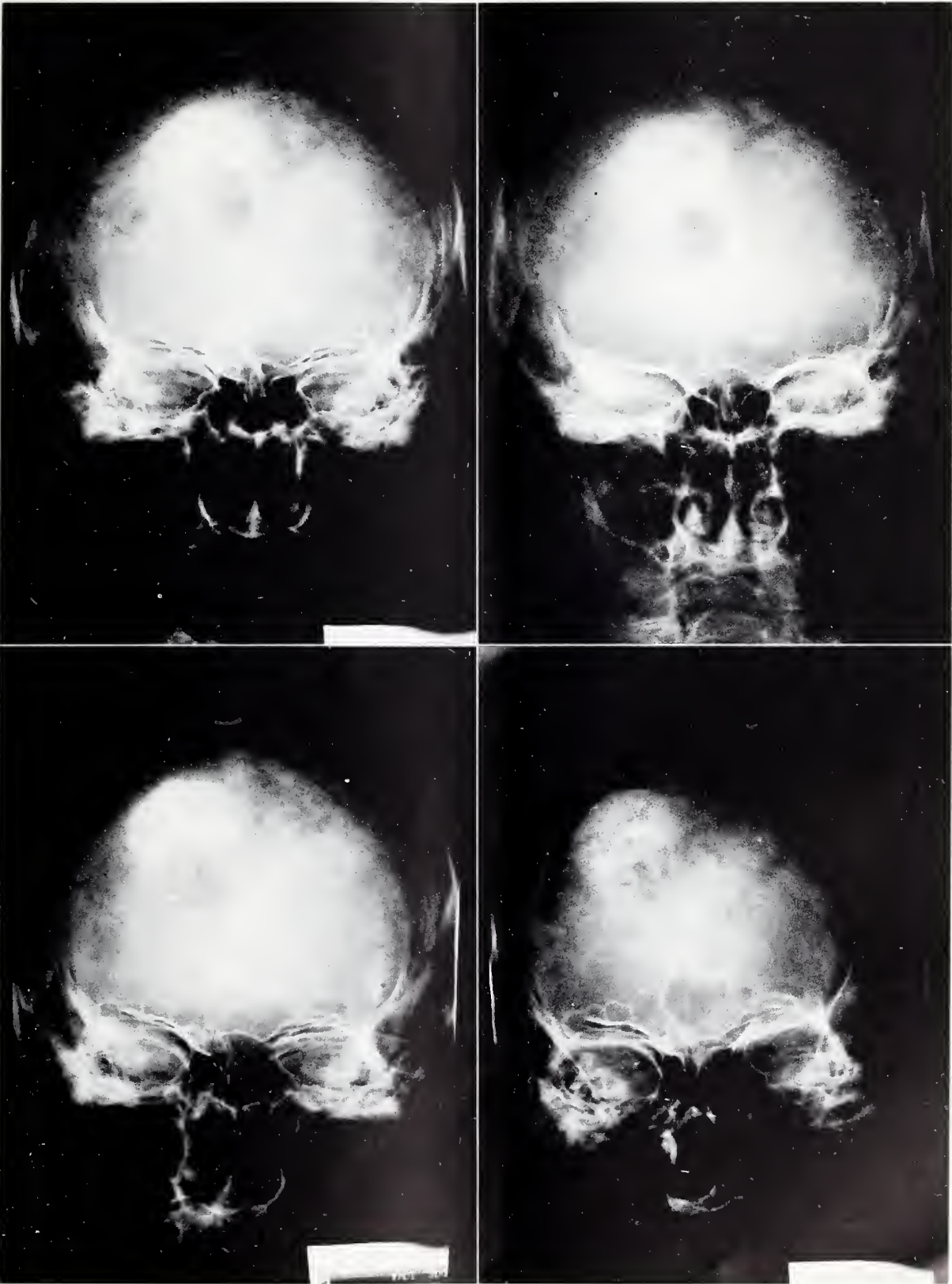


Figure 1





Tetracycline with Citric Acid **LEDERLE**

mission of certain cancers. Since 1952, hypophysectomies have been done in patients who had carcinoma of the breast and of the prostate. It had been found by earlier investigators—especially by Luft and Olivcrona, in Sweden—that objective remissions of the carcinoma metastases had occurred in about 54 per cent of breast cancer patients following hypophysectomies. In this country, Bronson Ray, at the New York Hospital, J. Evans, in Chicago, and Rasmussen, in Montreal, have confirmed those findings and have done a large number of hypophysectomies in similar patients. When other methods of treatment have no longer been effective, hypophysectomy has brought worthwhile remissions. That is the reason why this procedure was tried on this patient. Unfortunately, our medical and surgical staff is somewhat afraid of such neurosurgical operations, and up to the present time, we have done a hypophysectomy in only one case of breast cancer and in four cases of malignant diabetes mellitus.

The technic of the operation is a relatively simple one. The approach to the sella turcica consists usually of a right frontal bone flap, retraction and elevation of the right frontal lobe from the floor of the anterior fossa until the optic nerves and the optic chiasm are reached. The sella turcica lies beneath these structures. Then the pituitary stalk that connects the gland to the hypothalamus is clipped. The diaphragm of the sella is opened, and the pituitary gland is removed piecemeal. Care must be taken not to injure the deep venous sinuses which surround the sella. The operator is usually able to see the sella turcica with only one eye, and his assistant follows the progress of the operation blindly. Frequently, bleeding increases the technical difficulties.

After piecemeal removal of the gland, cotton pledgets soaked in Zenker's solution are introduced into the empty sella turcica in an attempt to destroy the remaining pituitary cells that may be adherent to the periosteum within the sella. After careful hemostasis, the bone and scalp are closed.

In this particular patient, we encountered quite a bit of bleeding. Each time we looked into the sella after removing a piece of gland it was bleeding, and in that region, 2 or 3 cc. of blood are sufficient to obstruct vision. In this patient, therefore, we did not use Zenker's solution inside the sella after removing what we thought was probably the whole gland, and we were glad that the bleeding could be controlled. Thus, at the end of the operation, there is always a doubt in our minds about whether or not the removal of the pituitary has been complete.

Recently, other methods have been used to obtain the same results—the implantation of radioactive pledgets or isotopes through a needle inserted through the sphenoid sinus into the sella turcica, and the irradiation of the hypophysis with

protons. A few months ago, Ehni reported on 17 cases in which he only interrupted the stalk of the pituitary without removing any pituitary tissue at all. He reported unquestionable amelioration but also spontaneous lactation. Thus, he raised the question of the influence of milk production upon breast cancer, a matter which I should like to hear discussed today.

At the recent meeting of the American College of Surgeons in Chicago, it was pointed out by Rasmussen, Bronson Ray and others that diabetes insipidus, such as was produced in the patient whom we are discussing, can be avoided if the pituitary stalk is not traumatized. They have discovered that if they put a clip on the pituitary stalk and then coagulate it, they produce diabetes insipidus. On the other hand, if the stalk is gently handled and severed at the diaphragm of the sella, diabetes insipidus does not occur in the postoperative period.

Dr. G. C. Albright, private practitioner, Iowa City: I wonder whether there are any people here who have heard of attempts at the removal of the pituitary through the nose. This violates, of course, many good principles of surgery. A head of a department here tried to remove the pituitary gland through the nasal cavity. Death resulted. At the postmortem, the pathologist told him very frankly that he hadn't even been in the sella turcica.

Dr. Jack Layton, Pathology: Dr. Perret was in the sella turcica; we have evidence to support that.

Dr. Perret: The trans-sphenoidal approach to the pituitary gland is a very old one indeed, and it was used until Frazier, Heuer and later Cushing showed that the intracranial route allowed visualization of the optic nerves and chiasm, and was not complicated by numerous infections resulting from opening the sinus. Today, Hirsch, in Providence, is still doing a large number of operations on the pituitary through the transsphenoidal approach with success and with little infection.

Dr. Hickey: Dr. Hodges, whom I am about to call upon, did not see this patient in life. He was given merely an unabridged version of the abstract of the patient's chart. We should like him to comment on the clinical and gradually deteriorating course of this patient in the last 11 weeks of her life.

Dr. R. E. Hodges, Internal Medicine: In the first place, we must realize that we are dealing with an elderly woman. She was 61 when she had evidence of carcinoma of the breast. At 64, she had a pathological fracture of her humerus, and she didn't come to our attention until she was 69. During a number of years, she felt well, and it was only after she failed to respond to testosterone that bilateral adrenalectomy was performed. Her response to that procedure was remarkably good. The fact that she developed Addison's disease is simply evidence of the success of the operation.

I think that we needn't dwell upon the episode of adrenal cortical insufficiency accompanied by hypoglycemia. However, I mention it because I want to point out the reasons why I think it did not relate to her death or to the events during the last 11 weeks of her life. You may have been surprised at the comment which Dr. Hickey made that her blood sugars ranged between 42 and 57 mg. per cent in spite of the fact that she had been given 100 mg. of cortisone daily. That is not abnormal in a patient who is in the midst of an acute Addisonian crisis. Sometimes, the response is exceedingly slow, and in consequence I don't believe we need to invoke any special theories to explain the hypoglycemia. It did not relate to her episode of shortness of breath, weakness and cyanosis which developed later.

In the fifth and sixth paragraphs of the protocol, you will notice two items which I think pertain to the patient's final cause of death. At the end of the fifth paragraph, we are told, "More destruction of the first, second, third and fourth ribs was apparent." Although none had been mentioned before, we can assume that there had been considerable involvement of the bony thorax. In the original protocol, mention was made of metastases to the ribs and to the seventh thoracic vertebra. In the next paragraph, you will notice that at the time of the adrenalectomy the surgeon could feel nodules on the pleural surface. I presume that he was feeling them through the diaphragm. Is that correct, Dr. Hickey?

Dr. Hickey: No, that is not correct.

Dr. Hodges: This was a transthoracic approach?

Dr. Hickey: No, it became so, but only inadvertently.

Dr. Hodges: All right, thank you. I point this out in order to call your attention to the fact that this lady did have numerous and widespread metastases of the thoracic wall and perhaps of the intrathoracic contents. Following hypophysectomy, she had an episode of weakness, confusion, vomiting and cyanosis which must have been an Addisonian crisis, as Dr. Hickey mentioned. This was on the fourteenth postoperative day. On the twenty-third postoperative day, she became cyanotic, the cyanosis allegedly being limited to her face, neck and thorax. The protocol stated that capillary refill was extremely slow when this cyanotic area was compressed. This would imply that there was some impairment of the arterial supply to this portion of her anatomy. Her blood pressure at that time was 110/70 mm. Hg., or in other words, she was not in shock and she had a respectable pulse pressure—40 mm. Hg. Her respiratory rate was extremely rapid, 44 per minute, and she had a pulse rate of 144. The comment was also made that "an x-ray of her chest shows the lung fields to be clear and that there is no venous engorgement." In other words, this was not a Stokes-collar type of phenomenon and could not be explained on the

basis of compression of the superior vena cava. We must assume that it was not an acute episode of congestive failure, since her lungs were clear, her neck veins were not distended, and still she felt short of breath. There had to be some interruption of arterial blood supplying the neck, thorax and face, and—we assume—the intracranial contents as well.

On the thirty-fifth postoperative day, 12 days after this other episode, she was transferred to another part of the hospital. At that time, she was receiving replacement medications consisting of small doses of thyroid, Pitressin, desoxycorticosterone acetate and cortisone, and in addition she was given sodium chloride and digitoxin. The latter implies that she must have had some congestive failure or that someone thought she had, or she would not have been given that drug. On the forty-ninth postoperative day, she became breathless, had tachycardia at the rate of 140, and a blood pressure of 100/65 mm. Hg. The veins, this time, were dilated (in her neck, I presume, though it does not say), and yet her lungs were clear. Her liver was enlarged downward and was acutely tender. She felt apprehensive and short of breath. An electrocardiogram was taken and was interpreted as normal. Again she was given digitalis, and the response, while not brilliant, apparently was satisfactory. Subsequent to this episode, she became unable to get out of bed. She had pain in her chest and in her arms, particularly the right, but the pain began in the interscapular area and radiated around the chest. It was relieved by a sublingual medication, presumably nitroglycerin. A short time thereafter, she developed distention of the abdomen, vomited and then died quietly.

Now we must assume that this second episode was an obstruction of outflow from the right side of the heart. Otherwise, her chest would have been filled with rales. This could have accounted for the distention of the liver, the distention of the neck veins, and later the distention of the abdomen, which I assume was a combination of hepatic distention and an accumulation of fluid, although the protocol doesn't say so.

I can't explain the first episode—the one in which she had cyanosis limited to the upper portion of her trunk with apparent delay in capillary refill. I think that the most likely explanation for the terminal episode, however, would be a mechanical obstruction of the pulmonary outflow tract. An alternative possibility could have been a neoplastic involvement of the pericardium rendering it gradually less elastic so that the heart was unable to fill properly and venous pressure increased in a retrograde direction. A less likely cause could have been an accumulation of fluid causing a gradual cardiac tamponade. So my guess is that the patient died of mechanical obstruction to ejection of blood from, or to filling of, the right ventricle.

Dr. R. H. Flocks, Urology: I wish to make just

one comment. The experience with hypophysectomy and adrenalectomy is different in the therapy of prostatic cancer, for there, in contrast with its usefulness in selected cases of breast cancer, it has not proved of great value. Possibly, the reason for the difference is a physiological one. The influence of prolactin production upon the breast may be the key in the effects produced in breast cancer by adrenalectomy and hypophysectomy. At any rate, it is important to emphasize that hormonal control of prostatic cancer, while quite important via orchiectomy and stilbestrol, is not anywhere nearly so satisfactory via adrenalectomy and hypophysectomy as it is in breast cancer.

Dr. Hickey: One would postulate, of course, that following an oophorectomy there would be a withdrawal of estrogenic substances which might be stimulating breast tumors to grow, but following the oophorectomy there is a continued excretion of estrogenic substances presumed to come from the adrenal. Upon removal of these stimulating substances through adrenalectomy, there may be further regression of the tumor as one continues this ablative therapy.

Upon removal of the hypophysis, even after the removal of the ovaries and the adrenals, it is supposed that there may be a further regression. It is known that when the breast is stimulated by means of progesterone or estrogen so as to stimulate the changes that might accompany the menstrual cycle, the effects are lost if the hypophysis has been removed. In the absence of the pituitary gland, there is a lack of effect. Then, in addition perhaps, there is a loss of a growth hormone or prolactin which may further upset the hormonal mechanism.

I think it is far too simple to credit the control of tumors to the removal of estrogen. We know certainly that by removing the ovary we are taking more than just an ordinary estrogenic substance, and by removing the adrenal we are taking away more than an estrogenic stimulant. I would carry this line of reasoning further and make the same postulation as regards hypophysectomy.

Dr. Emory D. Warner, Pathology: Dr. Hodges was essentially correct in his postulation of an obstruction to the flow of blood. The obstruction was within the pulmonary artery, rather than pressure on the outside, and consisted of mural thrombi in the main pulmonary arteries. The right pulmonary artery was completely occluded by laminated thrombus which had been there for a sufficient length of time to have permitted considerable organization. The center of the thrombus was fresher than that closer to the wall. The left pulmonary artery was not completely occluded, but very much compromised, by similar thrombus material in the left pulmonary artery. These thrombi were mural, they were spread out along the surface of the intimal lining and they were undergoing organization. Thus, the bulk of the thrombus

material in the pulmonary arteries, I think, undoubtedly was locally-formed thrombus. There was occlusion of the left internal iliac vein, with similar thrombus that was also undergoing organization. In its earlier stages, it possibly served as a source for emboli. There is no way for us to tell that there may not have been an initial pulmonary embolus, followed by superimposed thrombosis. So much for the immediate cause of death.

It is difficult to see how the patient survived as long as she did with the degree of pulmonary arterial occlusion that was present. The lungs were somewhat congested. The right one, particularly, was rather edematous at the time of death, and weighed roughly double the weight of the left lung. There were no infarcts, and there were no emboli in the distal pulmonary arterial branches.

With regard to the neoplasm, there was extensive metastatic involvement of the vertebral column, ribs and skull, as has already been indicated. There were gross nodules of neoplastic tissue up to 4 cm. in diameter in the liver. There was some surface involvement of the visceral pleura, particularly over the left apex. There were numerous subpleural nodules under the parietal pleura continuous with metastatic tumor in the ribs. There was no gross neoplasm found in other organs. No lymph nodes could be found which contained metastatic neoplasm. The internal mammary chains were dissected out carefully, and no neoplasm could be found in those areas. There was no recurrence or residual carcinoma at the mastectomy site. No adrenal tissue could be found at the time of autopsy. Remnants of the anterior lobe of the pituitary were present. Some of these remnants were rather badly degenerated and mixed with organizing blood clot, but there were several fragments of anterior pituitary that were quite well preserved. There was no evident wasting.

The patient was a very small woman, and her organs were all very small, though actually she was rather well nourished. The liver, for example, weighed only 750 Gm. It did have some central congestion, but no extreme or long-standing chronic passive congestion. The abdomen was not distended, incidentally, at the time of death, and there was no fluid in any of the serous cavities. In fact, the tissues in general seemed to be quite dry and sticky, suggesting considerable dehydration at the time of death.

The patient started having symptoms which would suggest pulmonary arterial obstruction on about the twenty-third postoperative day. The thrombus in the pulmonary artery might well be of that duration. It is very difficult to determine the age of a given arterial thrombus by the degree and state of maturity of the organizing tissue. The arterial wall provides a very poor bed from which granulation tissue to grow, and the process of organization may be greatly delayed.

The ribs showed neoplastic tissue that was grow-

ing in rather indifferent masses of tumor, with practically no evidence of differentiation. The bone lesions were not entirely osteolytic. There was extensive bone destruction, but there was also bone repair, and there were areas of new osteoblastic apposition bone being laid down.

I stated that there was no gross neoplasm in any of the viscera other than the liver. Yet, random sections of lung tissue do show rather extensive embolization of the small vessels in the lung parenchyma, with neoplastic cells as a microscopic finding. There was no neoplastic tissue in the major thrombi of the main pulmonary arteries at the hilus. All of the sections of the lungs, however, show embolization of small vessels. Tumor cell emboli were not found in the vessels elsewhere in the body.

The anterior pituitary removed at autopsy was rather well preserved anterior-lobe tissue. This was, perhaps, 1.5 mm. in diameter. There were several other smaller pieces of well-preserved pituitary. The thyroid gland weighed 45 Gm., for it was a nodular goiter. The thyroid tissue in between the nodules appeared histologically normal. I stress this point because the patient did need thyroid extract for clinical control.

In summary, we have a patient with considerable carcinomatous tissue, but not a massive amount even eight years after she had been found to have generalized metastases, and who died of thrombosis of the pulmonary arteries.

Dr. Hickey: I think it important to point out here that perhaps in this disseminated disease the patient would not have done better even if an extended mammary resection including the internal mammary nodes had been carried out. There was no recurrence at the local site, and there was no evidence of involvement of the internal mammary nodes.

Also, in commenting on Dr. Warner's discussion, I think it may be important to indicate that one cannot tell whether a patient will or will not do well following an adrenalectomy on the basis of the degree of differentiation of the adenocarcinoma of the breast. There are those who have the notion that they can forecast in this manner.

Dr. Gillies, will you point out the pertinent findings in the preoperative, pre-adrenalectomy chest radiographs and the radiograph of the chest that was taken just prior to the patient's death?

Dr. Carl L. Gillies, Radiology: The films of the chest showed metastatic lesions involving the vertebra, and an old pathologic fracture of the humerus which subsequently healed. At all times, the lung fields were clear, without evidence of metastasis to the lungs or pleura. The right breast shadow was absent. The last film taken immediately prior to death still showed negative lung fields. The ribs had regenerated, and the old fracture of

the humerus had healed and looked nearly like normal bone.

Dr. Hodges: Dr. Gillies, was there any difference in the degree of radiolucency between the right and the left lungs in either of the last films?

Dr. Gillies: Yes. That can be accounted for by the absence of the right breast shadow. I did not see evidence of occlusion of the pulmonary artery.

Dr. Hickey: I shall ask Dr. Bradbury to comment on the 17-ketosteroid determinations. Also, perhaps he will comment a bit on the hypoglycemic episodes and the difficulties we had with the hypoglycemia. Also, I hope he will say something on the rationale for hormonal treatment in breast cancer.

Dr. James T. Bradbury, Obstetrics & Gynecology: Normally, an estimation of urinary 17-ketosteroids gives an index of cortical adrenal activity. This patient had been adrenalectomized for some time, so a question is raised as to the validity or the significance of the 17-ketosteroid values obtained in this case. Cortisone is degraded in part to 17-ketosteroids, but ordinarily not more than 10 per cent of the administered dose is recovered as ketosteroids. The patient's ovaries, which had been subjected to irradiation in the early management of her malignancy, were found at autopsy to be atrophic. Thus the ovaries had been rendered an improbable source of steroids.

A similar instance of surprisingly high 17-ketosteroid excretion after hypophysectomy was reported recently. The patient was found to have breast carcinoma and was hypophysectomized in the twenty-sixth week of pregnancy. During the thirty-fourth week, while being maintained on cortisone and thyroid, her urinary 17-ketosteroid values were found to be 28.6 mg./24 hrs., and the next week were found to be 15.5 mg./24 hrs. Prior to that, the values had been only two or three milligrams per day. The Boston authors had no explanation for their high ketosteroid findings.

Hypophysectomy frequently results in a severe hypoglycemia—a starvation type of ketosis. The chemical method of estimating ketosteroids is a measure of ketonic groups, so we considered the possibility that our findings were an artifact. Acetone was added to a urine specimen, and then it was processed for ketosteroids. The extraction procedure eliminated the added acetone so that the recovery values were not distorted. Possibly other ketones such as ketohydroxybutyric acid should be investigated as possible interfering agents.

In the absence of evidence of interfering substances, one can only speculate on the possible sources of ketosteroids. Tissue slice and Warburg type studies have shown that nearly every tissue has enzymes which are capable of degrading steroid hormones and their precursors. Cholesterol is generally recognized as the source material for the biosynthesis of all the steroid hormones. In

unusual circumstances, tissue breakdown or damage, an enzymatic degradation of cholesterol could give rise to 17-ketosteroid substances.

The rationale of ovariectomy, adrenalectomy and hypophysectomy in cases of breast malignancy is based on a concept of hormone dependency of breast tissue, as Dr. Hickey has said. Normally, breast tissue develops under the influence of estrogen plus pituitary prolactin. These are complementary factors, since neither is effective by itself. Ovariectomy will eliminate the major source of estrogen. Adrenalectomy may eliminate a minor source of estrogen, and hypophysectomy removes the source of prolactin. Hormonally-dependent tumors may regress at least temporarily after any of these glandular excisions.

The comments Dr. Flocks has made are relative to Dr. Scott's work on the prostate. Dr. Scott has presented experimental evidence from hypophysectomized rats which he interprets as showing that prolactin augments the action of testosterone on the prostate. This augmentation is so slight that it may not be significant. It is not surprising, then, that hypophysectomy has not yielded any apparent benefit in cases of carcinoma of the prostate.

Dr. Perret mentioned the work of a group in Texas who have done pituitary-stalk sections rather than hypophysectomies in a group of women with carcinoma of the breast. They observed that lactation occurred postoperatively in some of their patients, along with some degree of subjective or objective improvement. If lactation is valid evidence of prolactin, it could be argued that stalk sections resulted in a decrease in estrogen production (ovarian or adrenal). The effect of stalk section on the production of growth hormone is not apparent. The growth hormone of the pituitary is a general metabolic hormone that may produce effects which modify the rate of tumor growth. Growth hormone acts as an insulin antagonist in that it inhibits the peripheral utilization of glucose.

Hypoglycemia is a major complication after hypophysectomy in experimental animals, as it was in the patient under consideration. It is standard postoperative practice to supply sugar in the drinking water and keep fresh fruit constantly available to experimental animals. Hypophysectomized subjects are unable to withstand fasting, and are extremely sensitive to insulin. DeBodo has found that hypophysectomized dogs are 60 to 100 times as responsive to insulin as is the normal dog. There is a very slow return to normal blood sugar values after insulin-induced hypoglycemia. The adrenalin response is also deficient, and thus there is a defect in the mobilization of glycogen from the liver. DeBodo found that adrenalectomy caused similar defects in glucose metabolism, but of smaller magnitude than those produced by hypophysectomy. These deviations in glucose me-

tabolism are due in part to the lack of adrenal glucocorticoids, but there are also other modifying factors. Growth hormone will restore several phases of carbohydrate metabolism, even in the absence of the adrenals.

When considering the concept of "hormonal dependency" of tumors, one must consider that the effects of the hormones may primarily be alterations of many biochemical relationships, rather than a simple, direct hormonal action on the tumor tissue *per se*. The altered glucose metabolism mentioned above is an example. Stilbestrol causes many changes in tissue enzyme concentrations and reaction rates, some of which may be unfavorable to continued tumor growth. Testosterone also produces changes in the biochemical milieu, and in some way is a neutralizer or competitive antagonist for some effects of estrogen. Glandular extirpations or steroid administrations thus become forms of chemotherapy which may adversely affect tumor growth by rapid alterations in the host blood and tissue components. Ultimately, the malignancy may accommodate itself to the new environment, however, and subsequent glandular extirpations or changes in steroid administration become necessary to shock the tumor through new, radical alterations in its biochemical environment.

Even in normal tissues which are hormone "dependent," the effective hormone is only a regulator of rate of activity, and does not determine absolute presence or absence of activity. Palliative management, then, becomes a series of delaying tactics which retard the rate of advance of the malignancy.

NECROPSY DIAGNOSES

1. Mural thrombus, pulmonary artery, bilaterally, with occlusion
2. Pulmonary edema and congestion
3. Adenocarcinoma of breast, right, post right radical mastectomy with metastasis to liver, skull, ribs, pleura, spine and lung
4. Adrenalectomy, bilateral, postoperative
5. Hypophysectomy, postoperative
6. Craniotomy, right frontal, postoperative
7. Encephalomalacia, frontal lobe, right inferior surface
8. Osteoma, skull, with metastatic adenocarcinoma
9. Dehydration, severe
10. Thrombus, external iliac vein, left
11. Fatty metamorphosis, liver
12. Arteriolonephrosclerosis, mild
13. Atrophy of internal genitalia, mild
14. Nodular goiter
15. Adenomatous polyp, rectum
16. Atherosclerosis, aorta, abdominal, with ulceration
17. Cystitis, chronic, urinary bladder.

Coming Meetings

In State

- Mar. 10 **Iowa Rural Health Conference.** SUI Institute of Agricultural Medicine, Iowa City
- Mar. 19 **Neurology Conference.** University Hospitals, Iowa City
- Apr. 1-3 **Middle States Public Health Association.** Hotel Savery, Des Moines
- Apr. 8 **Annual Meeting, Trudeau Society.** Hotel Savery, Des Moines
- Apr. 8-9 **Cardiac Auscultation.** University Hospitals, Iowa City
- Apr. 19-22 **Annual Meeting, Iowa State Medical Society.** Veterans Memorial Auditorium, Des Moines
- Apr. 24-26 **First Midwestern Sectional Meeting, Biological Photographic Association.** University of Iowa, Iowa City

Out of State

- Mar. 2-3 **Treatment of Varicose Veins.** Cook County Graduate School of Medicine, Chicago
- Mar. 2-4 **Allied Health Course in Nursing Service.** U. of Kansas School of Medicine, Kansas City, Kansas
- Mar. 2-4 **Pediatrics for General Physicians.** U. of Minnesota, Minneapolis
- Mar. 2-5 **Twenty-second Annual Meeting, New Orleans Graduate Medical Assembly.** Roosevelt Hotel, New Orleans, Louisiana
- Mar. 2-6 **Advanced Electrocardiography.** U. of Oklahoma Medical Center, Oklahoma City
- Mar. 2-6 **Blood Vessel Surgery.** Cook County Graduate School of Medicine, Chicago
- Mar. 2-6 **Surgery of the Colon & Rectum.** Cook County Graduate School of Medicine, Chicago
- Mar. 2-12 **Mediclinics of Minnesota, Fourth Annual Refresher Course of Postgraduate Medical Education.** Fort Lauderdale, Florida
- Mar. 2-13 **Diagnostic X-ray.** Cook County Graduate School of Medicine, Chicago
- Mar. 2-13 **Gastroscopy & Gastroenterology.** Cook County Graduate School of Medicine, Chicago
- Mar. 4 **Semiannual Providence Hospital Seminar.** Holyoke, Massachusetts
- Mar. 4-6 **Allied Health Course in Nursing Education.** U. of Kansas School of Medicine, Kansas City, Kansas
- Mar. 5 **Postgraduate Clinic, Michigan Academy of General Practice.** Sheraton-Cadillac Hotel, Detroit
- Mar. 5-6 **Third Annual Refresher Course, Massachusetts Society of Anesthesiologists.** Boston
- Mar. 5-7 **Fourteenth National Conference on Rural Health (American Medical Association's Council on Rural Health).** Broadview Hotel, Wichita, Kansas
- Mar. 6-7 **Diagnostic Radiology.** U.C.L.A., Los Angeles
- Mar. 7 **Obstetrical-Gynecological Symposium (Oklahoma City Obstetrical & Gynecological Society).** U. of Oklahoma Medical Center, Oklahoma City
- Mar. 8-9 **American Broncho-Esophagological Association.** The Homestead, Hot Springs, Virginia
- Mar. 8-9 **American Laryngological Association.** The Homestead, Hot Springs, Virginia
- Mar. 8-12 **Alumni Postgraduate Convention, 1959, College of Medical Evangelists.** Biltmore Hotel, Los Angeles
- Mar. 9 **National Multiple Sclerosis Society.** New York City
- Mar. 9-11 **Symposium on Pediatrics.** U. of Kansas School of Medicine, Kansas City, Kansas
- Mar. 9-12 **Sectional Meeting, American College of Surgeons.** Kiel Auditorium, St. Louis, Missouri
- Mar. 9-12 **Southeastern Surgical Congress.** Deauville Hotel, Miami Beach
- Mar. 9-13 **Vaginal Approach to Pelvic Surgery.** Cook County Graduate School of Medicine, Chicago
- Mar. 9-20 **Fractures and Traumatic Surgery.** Cook County Graduate School of Medicine, Chicago
- Mar. 9-20 **General and Surgical Obstetrics.** Cook County Graduate School of Medicine, Chicago
- Mar. 10-12 **American Laryngological, Rhinological and Otolological Society.** The Homestead, Hot Springs, Virginia

- Mar. 11 **Diagnosis and Management of Common Allergic Disorders.** U. of Oklahoma Medical Center, Oklahoma City
- Mar. 12-13 **Ophthalmology and Otolaryngology Symposium (Oklahoma City Society of Ophthalmology and Otolaryngology).** U. of Oklahoma Medical Center, Oklahoma City
- Mar. 13-14 **American Otolological Society.** The Homestead, Hot Springs, Virginia
- Mar. 13-14 **Ear, Nose and Throat.** U.C.L.A., Los Angeles
- Mar. 14 **Trauma for General Physicians.** U. of Minnesota, Minneapolis
- Mar. 14-15 **Fourth Annual Meeting, Southwestern Society of Nuclear Medicine.** Roosevelt Hotel, New Orleans
- Mar. 15-20 **Graduate Instruction Course and Annual Congress, American College of Allergists.** Fairmont Hotel, San Francisco
- Mar. 16-18 **Internal Medicine for Internists.** U. of Minnesota, Minneapolis
- Mar. 16-21 **Medical Technology.** U. of Colorado Medical Center, Denver
- Mar. 16-21 **Surgery of the Hand (N.Y.U.).** Beekman-Downtown Hospital, New York City
- Mar. 16-27 **Electrocardiography, Basic Course.** Cook County Graduate School of Medicine, Chicago
- Mar. 16-27 **Office and Operative Gynecology.** Cook County Graduate School of Medicine, Chicago
- Mar. 17-19 **National Health Council.** Palmer House, Chicago
- Mar. 17-31 **Orthopedic Aspects of the Treatment of Rheumatic Disorders.** N.Y.U., N.Y.C.
- Mar. 18 **American Society of Facial Plastic Surgery.** New York City
- Mar. 18 **Physical and Clinical Aspects of the Nervous System.** U.C.L.A., Los Angeles
- Mar. 19-21 **Section of General Practice, British Columbia Division, Canadian Medical Association.** Harrison Hot Springs Hotel, Harrison Hot Springs, B. C.
- Mar. 19-21 **Hematology and Hypertension.** U. of Wisconsin Medical School, Madison
- Mar. 20-21 **Regional Medicolegal Conference, American Medical Association.** District of Columbia Medical Society Headquarters, Washington, D. C.
- Mar. 20-21 **Ninth Annual Postgraduate Medical and Surgical Convention, Pioneers Memorial Hospital.** U. of Colorado Medical School, Denver
- Mar. 20-22 **Eastern Conference of Radiologists.** Statler Hotel, Washington, D. C.
- Mar. 20-22 **Fluid and Electrolyte Balance (U. of Southern California).** Hotel Statler, Los Angeles
- Mar. 20-24 **Diagnostic Radiology.** U. of California, San Francisco
- Mar. 21 **North Pacific Society of Internal Medicine.** Seattle
- Mar. 23-24 **Symposium on Cardiac Auscultation.** U. of Kansas School of Medicine, Kansas City, Kansas
- Mar. 23-25 **Refresher Course in Allergic Conditions.** N.Y.U., N.Y.C.
- Mar. 25-26 **Management of Sports Injuries.** U.C.L.A., Los Angeles
- Mar. 26 **Obstetrics (U. of Nebraska College of Medicine).** Lincoln General Hospital, Lincoln
- Mar. 27-28 **Symposium on Adrenal Steroids.** Stanford University, San Francisco
- Mar. 29-30 **Society of Head and Neck Surgeons.** Shoreham Hotel, Washington, D. C.
- Mar. 30-Apr. 1 **Thirty-sixth Annual Meeting, American Orthopsychiatric Association.** Sheraton-Palace Hotel, San Francisco
- Mar. 30-Apr. 1 **Gallbladder Surgery.** Cook County Graduate School of Medicine, Chicago
- Mar. 30-Apr. 1 **Southwestern Surgical Congress.** New Brown Palace Hotel, Denver
- Mar. 30-Apr. 3 **Basic Concepts of Water and Electrolyte Balance for General Physicians.** U. of Minnesota, Minneapolis
- Mar. 30-Apr. 3 **Twelfth Annual Postgraduate Course on Diseases of the Chest (American College of Chest Physicians).** Sheraton Hotel, Philadelphia
- Mar. 30-Apr. 10 **Urology.** Cook County Graduate School of Medicine, Chicago

- Mar. 30-Apr. 12 **Seventh Bahamas Medical Conference**. British Colonial Hotel, Nassau, Bahamas
- Mar. 31 **Immunization**. Children's Hospital, University of California, San Francisco
- Mar. 31-Apr. 5 **International Committee of Military Medicine and Pharmacy**. Paris, France
- Apr. 1-3 **American Association of Anatomists**. Seattle
- Apr. 1-4 **Neurosurgical Society of America**. The Homestead, Hot Springs, Virginia
- Apr. 1-4 **Western Conference on Anesthesiology (Biennial)**. Westward Ho Hotel, Phoenix
- Apr. 2-3 **Fifth Annual Western Regional Meeting, American Group Psychotherapy Association**. Sheraton-Palace Hotel, San Francisco
- Apr. 2-4 **California TB and Health Association and California Trudeau Society Annual Meeting**. Villa Motor Hotel, San Mateo
- Apr. 2-4 **Emergency Surgery for General Physicians**. University of Minnesota, Minneapolis
- Apr. 2-4 **Enzymes—Basic and Clinical Aspects**. University of California, San Francisco
- Apr. 2-4 **Problems of the Newborn Period**. University of Wisconsin Medical School, Madison
- Apr. 2-4 **Sixteenth Annual Meeting, Association of American Physicians and Surgeons**. Fort Worth, Texas
- Apr. 2-4 **Surgery of Hernia**. Cook County Graduate School of Medicine, Chicago
- Apr. 3-4 **Steroids**. U.C.L.A., Los Angeles
- Apr. 3-5 **American Society for the Study of Sterility**. Shelburne Hotel, Atlantic City, N. J.
- Apr. 4-5 **AMA Regional Medicolegal Conference**. Hotel Cleveland, Cleveland
- Apr. 5-8 **Missouri State Medical Association**. Kansas City, Missouri
- Apr. 5-12 **Seventh Annual Interim Scientific Meeting, Phi Lambda Kappa (for General Practitioners)**. Deauville Hotel, Miami Beach
- Apr. 6-8 **Annual Meeting, American College of Obstetricians & Gynecologists**. Convention Hall, Atlantic City, N. J.
- Apr. 6-8 **American Radium Society**. The Homestead, Hot Springs, Virginia
- Apr. 6-8 **Radiology for General Physicians**. University of Minnesota, Minneapolis
- Apr. 6-8 **Symposium on Otolaryngology**. University of Kansas School of Medicine, Kansas City, Kansas
- Apr. 6-9 **Eleventh Annual Scientific Assembly, American Academy of General Practice**. Civic Auditorium, San Francisco
- Apr. 6-9 **Sectional Meeting, American College of Surgeons**. Queen Elizabeth & Sheraton-Mount Royal Hotels, Montreal, Quebec, Canada
- Apr. 6-10 **Course for Physicians in General Practice**. University of California, San Francisco
- Apr. 6-10 **Surgery of the Colon and Rectum**. Cook County Graduate School of Medicine, Chicago
- Apr. 6-17 **American Board Review Course in Surgery**. Cook County Graduate School of Medicine, Chicago
- Apr. 7 **Los Angeles County Heart Association Workshop on Work Simplification Techniques for Physicians, Nurses, Occupational Therapists, Physical Therapists, Dietitians, Social Workers**. Southern California Gas Co., Los Angeles
- Apr. 8 **Anesthesia for the Part-time Anesthetist**. University of Oklahoma Medical Center, Oklahoma City
- Apr. 8-9 **Second National Symposium, Technology of Germfree Research**. Lubund Institute, University of Notre Dame, South Bend, Indiana
- Apr. 8-10 **Symposium on Ophthalmology**. University of Kansas School of Medicine, Kansas City, Kansas
- Apr. 9-11 **Mid-Central States Orthopaedic Society**. Town House, Omaha
- Apr. 10-11 **The Vagina (New York Academy of Sciences)**. Barbizon Plaza, New York City
- Apr. 10-11 **Treatment of Athletic Injuries (Regional Committee on Trauma of the American College of Surgeons)**. University of Oklahoma Medical Center, Oklahoma City
- Apr. 12-13 **American Society for Artificial Internal Organs**. Shelburne Hotel, Atlantic City, N. J.
- Apr. 12-15 **Tennessee State Medical Association**. Peabody Hotel, Memphis
- Apr. 12-16 **American Physiological Society**. Atlantic City
- Apr. 13-14 **Pediatrics (University of Nebraska College of Medicine and Division of Maternal and Child Health, Nebraska State Health Department)**. University of Nebraska College of Medicine, Omaha
- Apr. 13-15 **American Academy of Pediatrics (Spring Session)**. Sheraton Palace Hotel, San Francisco
- Apr. 13-15 **Arkansas Medical Society**. Goldman Hotel, Fort Smith
- Apr. 13-15 **Clinical Reviews (Mayo Clinic and the Faculty of the Mayo Foundation for Medical Education & Research)**. Mayo Clinic, Rochester, Minnesota
- Apr. 13-15 **Symposium on Anesthesiology**. University of Kansas School of Medicine, Kansas City, Kansas
- Apr. 13-17 **American Association of Immunologists**. Atlantic City, N. J.
- Apr. 13-17 **American Society for Pharmacology and Experimental Therapeutics**. Atlantic City, N. J.
- Apr. 13-18 **American Academy of Neurology**. Statler Hotel, Los Angeles
- Apr. 13-18 **American Society for Experimental Pathology**. Atlantic City, N. J.
- Apr. 13-18 **American Society of Biological Chemists**. Atlantic City, N. J.
- Apr. 14-16 **Postgraduate Conference (Creighton University School of Medicine)**. Creighton Memorial-St. Joseph's Hospital, Omaha
- Apr. 15-17 **American Association of Genito-Urinary Surgeons**. Seaview Country Club, Absecon, N. J.
- Apr. 15-17 **American Surgical Association**. Fairmont Hotel, San Francisco
- Apr. 15-17 **Medical and Chirurgical Faculty of the State of Maryland**. The Alcazar Hotel, Baltimore
- Apr. 15-17 **National Committee on the Aging (National Social Welfare Assembly)**. Statler Hotel, St. Louis
- Apr. 15-17 **Seventh Annual Spring Postgraduate Assembly and Poynter Lectures**. University of Nebraska College of Medicine, Omaha
- Apr. 16-18 **Allergy for General Physicians and Specialists**. University of Minnesota, Minneapolis
- Apr. 16-18 **American Association of Railway Surgeons**. Drake Hotel, Chicago
- Apr. 18-19 **AMA Regional Medicolegal Conference**. Hotel Utah, Salt Lake City
- Apr. 18-19 **Second International Symposium on Myasthenia Gravis (The Myasthenia Gravis Foundation, Inc., and The National Institute of Neurological Diseases and Blindness)**. Statler-Hilton Hotel, Los Angeles
- Apr. 18-21 **Texas Medical Association**. San Antonio
- Apr. 19 **Third Annual Meeting, American Society of Internal Medicine**. Conrad Hilton Hotel, Chicago
- Apr. 19-22 **Oklahoma State Medical Association**. Mayo Hotel, Tulsa
- Apr. 20-23 **American Urological Association**. Chalfonte-Haddon Hall, Atlantic City, N. J.
- Apr. 20-23 **Congress of International Anesthesia Research Society**. Miami, Florida
- Apr. 20-24 **American College of Physicians**. Conrad Hilton Hotel, Chicago
- Apr. 20-24 **American Board Review Course in Medicine**. Cook County Graduate School of Medicine, Chicago
- Apr. 21-23 **American Association for Thoracic Surgery**. Statler Hotel, Los Angeles
- Apr. 23-24 **Eastern States Health Education Conference**. New York Academy of Medicine, New York City
- Apr. 23-25 **American Association of Pathologists and Bacteriologists**. Somerset Hotel, Boston
- Apr. 23-25 **Association of Surgeons of Great Britain and Ireland**. London
- Apr. 23-25 **Annual Meeting, Hawaii Medical Association**. Hilo
- Apr. 25-26 **Academy of Psychoanalysis**. Philadelphia
- Apr. 25-29 **Medical Society of New Jersey**. Chalfonte-Haddon Hall, Atlantic City, N. J.
- Apr. 26-28 **Southwest Allergy Forum**. Shamrock-Hilton Hotel, Houston
- Apr. 26-29 **Industrial Medical Association**. Sherman Hotel, Chicago
- Apr. 27-28 **Society of Neurological Surgeons**. Waldorf-Astoria Hotel, New York City
- Apr. 27-29 **Thirtieth Annual Meeting, Aero Medical Association**. Statler Hotel, Los Angeles
- Apr. 27-28 **Tenth Annual Symposium on Recent Advances in the Study of Venereal Diseases (American Venereal Disease Association and the Public Health Service)**. Johns Hopkins University, Baltimore, Maryland

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THIRD IOWA RURAL HEALTH CONFERENCE

March 10 is the date that has been chosen for the annual Iowa Rural Health Conference, and this year it is to take place at the S.U.I. Institute of Agricultural Medicine, in Iowa City.

The State Medical Society has been the driving force behind these conferences from their inception, but the groups of people whom the State Society wishes to attract to them are quite likely to think that the value that doctors place upon such gatherings is directly proportional to the number of physicians who attend. Let's show the Extension Service workers, the Farm Bureau members, the representatives from the PTA, the TB and Health Association, the Heart Association and the Women's Clubs, and the other interested people that we attach some importance to the subjects that are to be discussed, to the work being done at the S.U.I. Institute of Agricultural Medicine, and especially to the help that all of these community leaders can give us in our rural health work!

The program this year is one that doctors will find highly interesting. At the morning session of the conference, the program will consist of the following:

"Genesis and Functioning of the S.U.I. Institute of Agricultural Medicine"—Franklin H. Top, M.D.

"Anthropology in the Institute of Agricultural Medicine"—Thomas McCorkle, Ph.D.

"A New Experiment in the Toxicology of Insecticides"—Paul Willis, Ph.D.

"Possible Hearing Damage From Farming Activities"—Scott Reger, Ph.D.

"Animal Diseases Transmissible to Man"—Richard Tjalma, D.V.M.

"The Family Industry: Farming"—Clyde M. Berry, Ph.D.

The afternoon will be devoted to tours of the facilities at the Institute of Agricultural Medicine and to demonstrations of the research being conducted there.

Please mark March 10 on your calendar, notify the headquarters office of the State Medical Society that you will be in Iowa City on that day, and then be present at the Conference. These people whom your State Medical Society is inviting are influential citizens—ones who can help us immeasurably in the sorts of work which it is our responsibility to do!

TB AGAIN DEMANDS ATTENTION IN IOWA

Are you aware that the new cases of TB in Iowa during 1958 exceeded those found during 1957 by roughly 26 per cent?

For this issue of the JOURNAL, the Iowa State Department of Health sent us the breakdown of new cases by counties that you will find on page 188, but sent us no discussion to print with it. The situation demands study.

Throughout the preceding decade, the number of new cases reported in Iowa had declined more or less steadily, as the following tabulation shows. The trend had been reversed only once, in 1953, and then not very alarmingly. But in 1958 the incidence rose by 155 cases.

1949—898 cases	1954—627 cases
1950—851 cases	1955—506 cases
1951—829 cases	1956—425 cases
1952—699 cases	1957—384 cases
1953—744 cases	1958—539 cases

For each of those years, the figure quoted represents only the new cases. In 1958, however, 116 previously-arrested cases were reported as relapsed, and there seems no reason for thinking that such patients pose less serious problems than do those who hadn't previously been known to have the disease.

In the December, 1958, issue of the Iowa Tuberculosis and Health Association's house organ TOPICS, before the statistics just recited had become available, the officers of the organization made the following statements:

"We know that approximately 270,000 Iowans have been infected with the TB germ, and this segment of the population comprises the risk group from whence new cases will develop in years to come.

"We know that 1,941 cases were under treatment in hospitals at one time or another during 1957, and that this was an increase of nearly 300 compared to the 1,647 hospitalized in 1956.

"We know that 52 per cent of the new cases being reported are in the far-advanced stage."

The tardiness of physicians' diagnosis of tuberculosis is expressed differently in the current issue of Parke, Davis & Company's monthly booklet PATTERNS OF DISEASE. There, we are told that nationally only 22 per cent of newly reported active and probably-active cases have been in the early stage.

PATTERNS recites some further and equally disturbing data: (1) In one large-scale study, three quarters of tuberculous children were found to have been infected by adults whose disease had not yet been diagnosed. (2) About one-sixth of the patients in that study group had contracted the disease from known tubercular patients who had been dismissed from sanatoria for treatment at home. Thus, it seems that physicians may not have been looking carefully enough for tuberculo-

sis in the grown-ups who come to consult them, and they may not have succeeded in enforcing the precautions against infection of family contacts by the post-sanatoria patients under their supervision.

NON-BETA CELL TUMOR

In this erudite age, it comes as a surprise to hear of the discovery of a new tumor, and as even more of a surprise to hear of one which has a functioning component. That the tumor was described in 1955 is beside the point. This editorial is based on the assumption that what is new to us may be new to you, and it is written to point out some interesting new facets of the physiology of gastric secretion that this new discovery has brought to light.

In 1955, Zollinger and Ellison first described a tumor of the non-beta islet cells of the pancreas which was associated with peptic ulceration of the jejunum.* Subsequently, they and others described "a triad consisting of fulminating ulcer diathesis and marked gastric secretion associated with a non-beta islet cell tumor of the pancreas."** To date, 52 cases have been reported.

The gastro-intestinal ulcerations in these patients occur in the esophagus and stomach, but more commonly in the duodenum and jejunum. They are refractory to medical treatment of any sort. The ulcers are associated with a nocturnal gastric secretion of two or three liters with a free hydrochloric acid total of 300 mEq., in contrast to the normal 12-hour value of 18 mEq. This hypersecretion persists "*as long as any gastric-secreting mucosa is retained.*"** It will persist after multiple subtotal gastrectomies, vagotomies and/or x-ray therapy. The tumor in the pancreas is often malignant, but slow-growing. Of the cells in the islands of Langerhans, only the beta cells (which produce insulin) can be excluded to date. Thus, the tumor or hyperplasia may be one of the alpha, gamma or delta cells, until further studies have isolated the offender beyond any reasonable doubt.

Of course there are many fascinating conjectures which arise from meditations on this discovery. (1) How does it happen that we haven't discovered this tumor before? Probably we have been so interested in the unusual ulcer that we have neglected to look elsewhere for its ultimate cause. How many other obvious facts about disease are begging to be discovered? (2) Many of us have seen cases of upper gastrointestinal ulceration which recur after multiple operations. How many of them have had non-beta cell tumors of the pancreas? (3) For many years, scientists have spec-

ulated about the possible relationship of the pancreas to gastric secretion. Now, we have a tumor which produces gastric secretion in tremendous amounts independent, apparently, of intrinsic, extrinsic or neurologic factors. None of the textbooks mention any possible relationship between islet cells and gastric secretion. Apparently, it is not glucagon as was first surmised.† It must be some new hormone, for those cells in the islets certainly aren't there merely for decorative purposes.

It seems that the entire book on gastric secretion will have to be rewritten!

LEE ROY WOODWARD, M.D., F.A.C.P.

1885-1958

An Appreciation

In the death of Dr. Lee Roy Woodward, of Mason City, on Tuesday, December 9, 1958, Iowa medicine lost one of its foremost leaders. He was a native Iowan, having been born on a farm in Cerro Gordo County, September 16, 1885, and had his early education in the public and high schools of Mason City. He received the Bachelor of Science degree from Grinnell College in 1909, and afterward taught in the high schools at Fort Madison and Clinton until 1911. He was married in 1911 to the late Lynn Adele Webster, whom he had met at Grinnell. She died in 1953. In 1911 he went to China. There, he was professor of chemistry and physics at Chihli Provincial College, Pasting-fu, for one year, and then at Pei Yang University, Tientsin, until 1914, when he returned to this country. He entered Rush Medical College, Chicago, in 1914 and graduated with the degree of Doctor of Medicine in 1917. He served a one-year internship at St. Luke's Hospital, Chicago, and began the general practice of medicine in Deer Lodge, Montana. In 1921, he returned to Mason City and with his associate, the late Dr. George M. Crabb, a surgeon, joined the Park Hospital Clinic.

He confined his practice to internal medicine, and was recognized as an internist by his election to fellowship in the American College of Physicians in 1931. Later, in 1937, he was certified by the American Board of Internal Medicine without examination.

In 1925, he reported to the Cerro Gordo County Medical Society the diagnosis of coronary thrombosis in its early stage, directing special attention to the significant electrocardiographic changes in this disease condition.

In December, 1926, he recognized the first case of undulant fever in Iowa due to infection with

* Zollinger, R. M., and Ellison, E. H.: Primary peptic ulcerations of jejunum associated with islet cell tumors of pancreas. *Ann. Surg.*, **142**:709-728, (Oct.) 1955.

** Zollinger, R. M., and McPherson, R. C.: Ulcerogenic tumors of pancreas. *Am. J. Surg.*, **95**:359-365, (Mar.) 1958.

† Discussion by Eisenman, B., and Poth, E. J., of a paper by Ellison, E. H.: Ulcerogenic tumor of pancreas. *Surgery*, **40**:147-170, (July) 1956.



Lee Roy Woodward, M.D.

Brucella melitensis, variety *abortus*. The State Hygienic Laboratory at Iowa City reported a specific agglutination test of 1-1280 variety *abortus*. Blood culture was negative. It was reported in the JOURNAL OF THE IOWA STATE MEDICAL SOCIETY in September, 1927* under the title "Malta fever," although the more descriptive term "undulant fever" was coming into general use. Later, the name was changed to "brucellosis."

Dr. Woodward had a long service in the Iowa State Medical Society, beginning with the chairmanship of the Medical Section in 1929. He was councilor for the Second District from 1931 until 1938; chairman of the Council from 1931 until 1933; and trustee of the Society from 1938 to 1942. He was made president-elect in 1943, and served as the ninety-fourth president of the Society in 1944. His address as president was entitled "Medicine in a Postwar World."**

Following his service as president, he became one of the organizers of Iowa Medical Service (Blue Shield), and served on its board of directors from 1945 to 1954. From 1946 to 1949, he served a second period as trustee of the State Medical Society, an assignment that was unique in the history of the Society.

During World War II, Dr. Woodward served as consultant in cardiology to the selective-service boards of nine northern Iowa counties for three years.

* Woodward, L. R.: Malta fever. J. IOWA M. SOC. 17:312-315, (Sept.) 1927.

** Woodward, L. R.: Medicine in postwar world. J. IOWA M. SOC., 34:183-186, (May) 1944.

He was a member of the Iowa Clinical Medical Society and the AMA, a fellow of the American College of Physicians and a diplomate of the American Board of Internal Medicine. He was also a member of the Phi Beta Kappa Society at Grinnell College.

In 1953, the Iowa State Medical Society, at its annual meeting, conferred on Dr. Lee Roy Woodward its Award of Merit, with the following citation: "For meritorious services in organizing Blue Shield Insurance and as Committee Member, District Councilor, Trustee, President-elect and President of the Society."

On October 26, 1957, Dr. Woodward was honored by the Board of Trustees of Grinnell College, his *alma mater*, with a citation "for outstanding achievements and services which reflect honor upon both the College and the home community."

Dr. Woodward is survived by his widow, three children and 10 grandchildren. He was married a second time, in 1955, to Esther Wimmer Woodward. His daughter, Mrs. John D. Haywood, lives in Mason City. His two sons are physicians; Dr. Edward R. Woodward is professor and chairman of the Department of Surgery at the University of Florida College of Medicine, Gainesville, and Dr. Arthur W. Woodward practices the specialty of urology in Waterloo.

Thus was brought to a close a life of useful and dedicated service in medicine and the humanities. Dr. Woodward's stimulating personality and fellowship will be an enduring memory.

—Walter L. Bierring, M.D.

FILM ON LEGAL MEDICINE

On February 4, the American Medical Association and the American Hospital Association released a new film on hospitals and the law, entitled "No Margin for Error."

It presents one of the most pressing current problems in legal medicine—the cause and effect of human mistakes in the complex system of the modern hospital. Skillfully and candidly, it presents the major causes of in-hospital professional liability actions through the dramatization of case histories. Mix-ups in patient identification, mistakes in blood-bank procedures and errors in dosages are examples of problems that the film touches upon. Based upon a recent study, 45 per cent of all medication errors occur as results of mistakes in patient identification. The film points the way for active, thoughtful cooperation between medical and administrative staffs of the hospital.

"No Margin for Error" is a 16 mm. black and white, sound film with a running time of 30 minutes. Prints are available from the Wm. S. Merrell Company, Cincinnati 15, or from the AMA, 535 North Dearborn Street, Chicago 10.

President's Page

FREE CHOICE OF PHYSICIAN

May I urge your careful study of the report of the AMA Commission on Medical Care Plans which has been published as a supplement to the January 17 issue of J.A.M.A.

It summarizes an exhaustive 3½-year study of the various types of "closed-panel" arrangements for providing medical care to groups of patients—plans under which the patient's choice of physician is either extremely narrow or altogether nonexistent. The Commission reviewed three aspects of these arrangements: (1) methods of operation; (2) effects on the quantity and quality of medical care provided; and (3) legal and ethical questions relating both to the participating doctors and to their private-practitioner colleagues.

Though, at the time the report was presented to the AMA House of Delegates in Minneapolis, some people thought that it represented a change from medicine's long-standing insistence upon every patient's free choice of the physician who is to treat him, the fact remains that it was merely an objective survey of a type of practice that has attained some prominence in many sections of the United States. In its summary of findings, the Commission on Medical Care said that the absence of free choice of physician had not necessarily resulted in an inferior sort of medical care, and that closed-panel plans in some instances had raised the quality of medical care available to the particular segments of the population served by them. It should be noted, however, that the Commission neither gave its approval to closed-panel practice nor suggested that the AMA quit insisting upon free choice of physician. Furthermore, because the delegates had had too little time to study the report, it was merely received, rather than considered in detail, at the Minneapolis meeting. It is on the agenda for the Atlantic City session in June.

Fortunately, as most of us think, we in Iowa have had no close look at closed-panel practice, but such arrangements are numerous elsewhere in the country, and each of us should make the most of this opportunity to acquaint himself with them.



President

THE JOURNAL *Book Shelf*



BOOKS RECEIVED

LONG-TERM ILLNESS: MANAGEMENT OF THE CHRONICALLY ILL PATIENT, ed. by *Michael G. Wohl*, M.D. (Philadelphia, W. B. Saunders Company, 1959. \$17.00).

FRACTURE SURGERY: A TEXTBOOK OF COMMON FRACTURES, by *Henry Milch*, M.D., and *Robert Austin Milch*, M.D. (New York, Hoeber-Harper Book Co., 1959. \$17.50).

THE MANAGEMENT OF FRACTURES AND DISLOCATIONS: AN ATLAS, VOLS. I and II, by *Anthony F. DePalma*, M.D. (Philadelphia, W. B. Saunders Company, 1959. \$35.00).

PRACTICAL DERMATOLOGY, SECOND EDITION, by *George M. Lewis*, M.D. (Philadelphia, W. B. Saunders Company, 1959. \$8.00).

VASCULAR SURGERY, by *Geza de Takats*, M.D. (Philadelphia, W. B. Saunders Company, 1959. \$17.50).

THE YEAR BOOK OF DRUG THERAPY (1958-1959 YEAR BOOK SERIES), ed. by *Harry Beckman*, M.D. (Chicago, The Year Book Publishers, 1959. \$7.50).

BONE TUMORS, SECOND EDITION, by *Louis Lichtenstein*, M.D. (St. Louis, The C. V. Mosby Company, 1959. \$12.00).

SYMPOSIUM ON OPERATIVE OBSTETRICS, ed. by *J. Robert Willson*, M.D., and SYMPOSIUM ON GENITAL CANCER, ed. by *Daniel G. Morton*, M.D. Vol. I, No. 2 of CLINICAL OBSTETRICS AND GYNECOLOGY, A QUARTERLY BOOK SERIES. (New York, Hoeber-Harper Co., 1958. \$18 per year for four consecutive numbers).

CIBA FOUNDATION SYMPOSIUM ON AMINO ACIDS AND PEPTIDES WITH ANTIMETABOLIC ACTIVITY, ed. by *G. E. W. Wolstenholme*, O.B.E., M.A., M.B., B.Ch., and *Cecilia M. O'Connor*, B.Sc. (Boston, Little, Brown and Company, 1958. \$8.75).

THE SEDIMENTATION RATE OF HUMAN ERYTHROCYTES, by *Frank Wright*, M.D. (New York, The Vantage Press, \$2.50).

BOOK REVIEWS

CIBA FOUNDATION SYMPOSIUM ON THE NEUROLOGICAL BASIS OF BEHAVIOR, ed. by *G. E. W. Wolstenholme*, O.B.E., M.A., M.B., B.Ch., and *Cecilia M. O'Connor*, B.Sc. (Boston, Little, Brown and Company, 1958. \$9.00).

This symposium was held to commemorate the birth of the great pioneer neurophysiologist Sir Charles Sherrington (1857-1952). Sherrington made many studies of the segmental reflex arc and of the higher sensorimotor arch through the cerebral cortex. "Recurrent in his thinking," as Magoun says, "was the concept of organization of each level of the nervous system for behavior in terms of limbs for afferent and for efferent activity, with the transition from the one to the other proceeding through a stage involving association and integration."

As Penfield points out, "If the time ever arrives

when we can describe fully the neurological basis of behavior, neurology and psychiatry will have become one subject." That time has not yet arrived, but not because of a lack of effort on the parts of the 34 researchers who participated in this symposium. The papers presented range from neuronal electrophysiology to animal studies in behavior and psychology.

One of the more fascinating studies reported had to do with "selective effects of drives and drugs on 'reward' systems of the brain." Electrodes were implanted in the brain of the living rat, and an electrical circuit was so arranged that the experimental animal could deliver a brain-shock to himself by stepping on a pedal. When the electrodes were placed in certain parts of the brain, the animals stimulated themselves regularly for long periods of time, showing a preference for this self-stimulatory activity over all other pursuits. Here, the stimulation was centered on the hypothalamus, including most of the rhinencephalic cortex plus parts of the thalamus, tegmentum and basal ganglia. Avoidance of self-stimulation could be produced by placement of the electrodes in other parts of the brain. Here, the stimulation invaded the subthalamus and the dorsal hypothalamus in the more lateral regions, and extended back into the midbrain. In human behavior a comparable situation may be the self-induced photogenic epilepsy described by Gestalt in 1951.

The 19 papers in the symposium bring the reader authoritative and significant information bearing upon the interrelations of neural and behavioral mechanisms. The individual contributions are followed by a printed record of the discussions which occurred at the symposium. This scheme, common to all the Ciba Symposia with which I am familiar, adds much to the value of the record. A short general discussion concludes the book.

It is difficult and perhaps impossible to summarize a volume of this sort satisfactorily. The information provided is exploratory and tentative, since the contributors are still at the seeking rather than at the answering stage. Nonetheless, the importance of the questions being asked is no less dim because of the incompleteness of the answers. When and if psychology becomes definable in terms of anatomical, physiological, chemical and pharmacological (*et al.*) ordinates, the efforts reported in this symposium will be looked back upon with special regard and respect.

It is not easy to say to whom such a volume as this will have greatest appeal. A "new frontier of the mind," as it were, is introduced, and thus the book can be expected to appeal to the psychologist, the psychiatrist, the neurologist and to all others of us who are concerned with mind-body relationships.—*John T. Bakody*, M.D.

WHAT DO WE KNOW ABOUT HEART ATTACKS? by *John W. Gofman, M.D.* (New York City, G. P. Putnam's Sons, 1958. \$3.50).

Indictment of the lipoproteins in the blood as the causative agent in coronary heart disease is the theme of this volume. It is a theme elaborated by Dr. Gofman in previous publications which, like this one, are designed for the lay reader. Not all physicians will agree with the author's enthusiasm for the "atherogenic index" as a key to the solution of the coronary disease problem.—*Herman J. Smith, M.D.*

YEAR BOOK OF GENERAL SURGERY (1958-1959 YEAR BOOK SERIES), ed. by *Michael E. DeBakey, M.D.* (Chicago, The Year Book Publishers, Inc., 1958. \$7.50).

In the present era of voluminous medical literature, THE YEAR BOOK OF GENERAL SURGERY is of tremendous help in keeping the surgeon up to date on the many new developments in his field.

As in previous years, important articles from the literature are abstracted, covering in addition to the various systems, e.g., head and neck, lungs, heart, biliary system, etc., such topics as wound healing, water and electrolyte balance, anesthesia and the pharmacology of certain of the newer drugs used in general surgery.

The editor has added to the liveliness of the book by frequently interjecting his own personal views, which on occasion are in sharp contrast to those of the authors whose works he is summarizing.

This book is highly recommended for anyone interested in the field of general surgery.—*Charles C. Edwards, M.D.*

ANATOMY FOR SURGEONS, VOL. III: THE BACK AND LIMBS, by *W. Hollinshead, Ph.D.* (New York, Hoeber-Harper Book Co., 1958. \$23.50).

The third and last volume of this anatomical undertaking is comparable in scope and extent to its predecessors. It offers the surgeon a reference from which to obtain brief and superficial reviews of essential anatomical facts that have daily application in the operating room. The book is what it was intended to be, but it is much less than a ready reference, since it can be no closer to the surgeon than is his office or home bookshelf. Yet, what anatomical work need be closer?

If one is to gain any value from such an anatomical reference, one must have a sound background in the basic science upon which he can build daily and in which he needs to refresh himself only as an occasion arises. This volume fulfills the latter requirement, and in some instances may help to complete the former. It cannot, however, provide the essential foundation.

The book does fall short of satisfying the surgeon in that little attention is given to the correlation and practical application of the basic science. Again, this was not the author's intention. One must browse through it and decide for himself whether it fills his needs. I should greatly have preferred such a volume to include some of the practical applications of the anatomical facts.—*James M. Head, M.D.*

THE CARE OF THE GERIATRIC PATIENT, ed. by *E. V. Cowdry, Ph.D.* (St. Louis, The C. V. Mosby Company, 1958. \$8.00).

Twenty-two noted authorities have combined their talents to bring this book to us. The chapters have titles such as "The Physician and the Geriatric Patient," "Mental Aspects of Geriatric Care," "Drugs in the Treatment of the Geriatric Patient" and "The Care of the Geriatric Patient in His Own Home." The book is a small one, as books go these days, for it has only 473 pages, and it has but few tables and illustrations. It is, however, extremely well set up, it is printed in rather large type, and it has excellent subheadings and reference material.

The pertinent findings of this reviewer relate, in the first place, to the excellence and practicality of the subject matter. Care of the aged is going to be one of the largest problems of the coming generation. It is certainly a subject in which we are evincing only the dawn of interest. One of the most interesting chapters in the volume deals with comparative analysis of learning ability—i.e., in what particulars the oldster is equal, inferior and superior, respectively, to a younger individual.

This little book is written in such an easily understandable style that it is suited for all who care for the aged—M.D.'s, nurses, practical nurses, nursing-home supervisors and lay individuals. It gives the fundamentals of the problem as the experts of today see them. Let us hope that many people read the book from cover to cover as I did.—*Daniel A. Glomset, M.D.*

HANDBOOK OF CARDIOLOGY FOR NURSES, THIRD EDITION, by *Walter Modell, M.D.*, and *Doris R. Schwartz, R.N.* (New York, Springer Publishing Company, Inc., 1958. \$4.50).

This book, as the title indicates, was written expressly for the nurse—to give her information about the different heart conditions and the nursing problems presented by each one. It has been written so that it can be understood easily.

The introduction explains the anatomy and physiology of the heart. The authors then go on to explain the pathology which may result from heart disease and how this affects the functioning of the heart. The laboratory tests, x-rays, electrocardiography, cardiac catheterization and other diagnostic procedures are briefly explained, as well as the signs and symptoms of heart disease.

A separate chapter is devoted to each of the commoner forms of heart disease. The complications and emergencies that may arise in heart disease also take up several chapters.

The treatment methods are next explained, and particular emphasis is given to medications and to the important part which surgery is now playing in the treatment of heart conditions. The remaining chapters of the book are devoted to the nursing care of the cardiac patient. There, an explanation is given of the nurse's specific functions and of the problems involved in caring for children as well as adults with either chronic or acute heart disease.

I think this book would be helpful to all nurses, but especially to student nurses writing case studies or preparing assignments for classes. It is so written that any nurse would be able to understand it.—*Margaret A. Rankin, R.N.*

THE DOCTOR'S BUSINESS

Keep Your Insurance Company Informed

HOWARD D. BAKER

WATERLOO



When you have paid out money for equipment, you realize that this equipment will need some future attention if it is to continue performing its function. Yet you may not remember that this same attention is required for much more valuable pieces of property—your life insurance policies. You can't just put these policies away in your safety deposit box and forget them. As the years pass, all sorts of events can take place to alter your original plans, and your insurance company can't do a thing to help adapt your policies to your changing situation unless you have taken the initiative.

Here are eight of the innumerable events that could require your taking special action. If any of them occur, remember to notify your company.

1. *You may change your address.* Failure in notification of such a change is one of the main causes for lapsed policies and lost policyholders.

2. *You may give your policy as security for a bank loan.* At that time, you must formally notify the insurance company of the consequent assignment of your rights under the policy. Then, when you have repaid the loan, you must be sure that a properly executed release is filed with the company.

3. *You may change your marital status.* In that event, you will undoubtedly want to change your beneficiary. Until you make that change, the company is bound by contract to pay the person previously named. A great deal of financial hardship and ill will has been caused by failures to make such changes.

4. *Your beneficiary may die or you may acquire an additional dependent.* Again, it is up to you to make whatever revision you may desire. Otherwise, the insurance proceeds may be paid contrary to your wishes.

5. *You may surrender your policy.* Get your insurance agent to assist you in accomplishing this to your best advantage. Rights upon surrender or lapse of policies differ greatly, and you will need to be fully informed of your options.

6. *You may wish to change your dividend and interest arrangement.* Unless you make your desires known, the company will continue holding or applying such sums according to the original contract.

7. *Your financial situation may change.* An increase in income, a new mortgage, an inheritance or some other windfall may affect the adequacy of your life insurance program. In any of these circumstances, you and your insurance adviser should reexamine it and consider alterations, and since you are the only one who will know of these changes, you are the one who must call for a conference.

8. *You may avail yourself of a group-insurance plan or a pension arrangement.* Such an addition to your financial program could make it advisable for you to reorganize your previous life-insurance schedule.

Just as in the case of equipment, life insurance needs maintenance, and the real responsibility for that maintenance rests upon you.



*Blue Cross
Blue Shield*



AMA—Blue Shield—Aged

The following resolution was passed by the AMA House of Delegates December 4, 1958:

“That the American Medical Association, the constituent and component medical societies, as well as physicians everywhere, expedite the development of an effective voluntary health insurance or prepayment program for the group over 65 with modest resources or low family income; that physicians agree to accept a level of compensation for medical services rendered to this group, which will permit the development of such insurance and prepayment plan at a reduced rate.”

Iowa Blue Shield has been handed a copy of this resolution, as were other Blue Shield Plans in our country, and officials accept the challenge and are seriously studying various methods to accomplish this objective. All realize if private enterprise fails to develop a satisfactory answer to the problem, government will solve it through increased taxation and greater controls over our lives.

Physicians throughout our great State of Iowa are urged to study the problem in all its aspects and give Blue Shield Board Members the benefit of their thoughtful deliberations. It will require the whole-hearted cooperation of each and every physician.

MEDICAL HISTORY



Then and Now

WENDELL L. DOWNING, M.D.

LE MARS

This is a personal narrative concerning medicine in Iowa as I have observed it in my father's practice and later in my own, for over half a century. It covers the period in medical practice from the time of the horse and buggy and dirt roads, to the days of modern cars, hard-surfaced roads and present-day medicine practiced in well-equipped offices and hospitals.

Towns in Iowa are, on the average, about seven miles apart, and no doubt many of our young people, when they are required to reduce speed as they drive through them, wonder why they were placed so close together. The reason was, of course, that traveling half that distance behind a team of horses took the early settlers an hour, or very nearly that long, and they regarded an hour's driving time each way as the permissible maximum for their trips to town. Anything in excess of seven or at most 10 miles, going and coming, would have been too far for them to go to shop, haul produce or obtain medical care. Thus, for years the early Iowa physicians located in these towns so as to be near their prospective patients.

How well I recall the life my father led as a general practitioner in a small southern Iowa town, a busy railroad-division town of about 1,000 people. The three local physicians were all busy, despite the fact that at least one doctor was located in each of the neighboring small communities. There were dirt roads in all directions, and they were truly impassable in wet weather.

My father always kept four horses, and in the winter months he had the help of a hired man. I can still see him as he started out early in the morning to make one or two country calls and as he came back at about noon for a hurried dinner. Then he would change teams and drive off again in another direction to see one or two more patients. The rest of the day he would spend in his office, seeing a few patients with minor illnesses or injuries.

How many of you ever rode in an open buggy in cold, winter weather? I well recall when, in my youth, my dad got the first "storm front" for his buggy. The improvement was regarded as a modern miracle, and half the people in town came by to see it.

All obstetrical cases were delivered in the home in those days, and home confinements were a nightmare. Dad would be gone from six to eight hours on an average case, and frequently for a day or two on a difficult one. We never knew when he would be back, and when he did arrive, he was usually exhausted. The first major fracture that I remember seeing as a youth was that of a farmer 12 miles out in the country. It was an oblique fracture of the femur, and it was treated at home by means of traction applied over the foot of the bed. I can still see my father measuring the length of the patient's extremity, adding or taking off weights and adjusting pillows. He had no x-ray—just common sense treatment. I wonder how many calls he made on that one patient over a period of three or four months.

THE FIRST AND SECOND DECADES OF THIS CENTURY

But times did change, and in 1909 we bought our first car, a two-cylinder Maxwell that had no top or windshield. "Modern transportation" was available for a few months, but then came winter weather and bad roads, and the car was put up on jacks until summer came again.

Actually, the three local doctors worked long hours but saw few patients, and the drugs they prescribed were designed to relieve symptoms rather than to effect cures. What about hospitals? The only one available was a converted residence in the county seat 14 miles away. Besides, the early hospital was a place where patients went to die, not to get well. They usually went late in the course of their illness, and the death rate there was naturally high. Getting patients to consent to hospitalization was not easy, for they much preferred to die at home. Transporting them to the hospital was also a problem.

By the time I began my practice, in a county-seat town in northwest Iowa in 1920, many changes had taken place. For transportation, I had a Model T Ford. It had no heater, but it was much warmer than a buggy or an open car like my father's first one. The roads were better than they had been, but none were hard surfaced. My first year of practice began in late fall. First, we had

heavy rains late in November, and the muddy roads froze shortly thereafter, preserving the deep ruts all through winter. Did you ever drive a Model T for hours at a time in low gear? The planetary transmission required the driver to push hard and constantly on the low-gear pedal, and the bad roads called for maximum pulling power. My left leg was sore all of that winter from pushing on the low pedal, and another anatomical area was equally sore from bumping constantly on a hard cushion.

By 1920, doctors were beginning to disappear from the neighboring towns in our area, and getting the patient to the doctor or the doctor to the patient was not easy. From 1920 to 1935, most of our deliveries were still done in the home, for patients had not been educated to go to our new hospital. Normal cases required from four to six hours, and an entire night or even a day or two away from town was common in difficult cases. And how the work piled up when we were away!

The office cases were numerous, with boils, abscesses, carbuncles and middle-ear infections especially common. Wrist fractures from cranking cold Model T's were numerous in the winter months. We made home calls both in town and in the country to see patients with diphtheria, scarlet fever, pneumonia and typhoid. The hospital was filled with cases of ruptured appendicitis, osteomyelitis and mastoiditis. Much of the doctor's time was taken up with these trying patients. Emotional problems were less frequently encountered then than now, or at least they were seldom so diagnosed. Probably such cases existed, and had we diagnosed them correctly, perhaps fewer "chronic appendices" would have been removed, fewer uteri would have been suspended, and not so many ovaries would have been removed in attempts to relieve vague symptoms.

What young doctor of today has seen a patient with lobar pneumonia and hoped for a crisis to occur in from six to seven days? How well I recall a patient with lobar pneumonia whom I treated at his home seven miles out in the country! He was a farmer about 40 years of age, seriously ill with high fever and delirium. The one nurse was on 24-hour duty, and the patient's family and relatives had to assist by taking turns holding him in bed. The drugs used at that period were of little benefit, being effective in relieving symptoms rather than in producing a cure. Serums and antibiotics were unheard of. One or two calls daily were considered necessary, and when this patient died after nine or 10 days, the relatives and the doctor were all exhausted.

Contrast present-day care with that which was available in the early twenties. Three or four weeks of hospitalization were usual in cases of perforated appendix and peritonitis. I well remember a robust man of about 50 who was admitted with advanced



Wendell L. Downing, M.D.

peritonitis, distention and dehydration. An emergency appendectomy was done, but vomiting, distention and dehydration continued, and delirium developed. The patient was treated with repeated stomach lavage by means of a large stomach tube, high enemas were given many times a day, and a small amount of saline was given subcutaneously. These measures did little to relieve his troubles. His case was a 24-hour nightmare for 10 days, before death mercifully brought relief to a tortured patient and a weary staff.

In 1920, toxic goiter was common, no effective medical treatment was known, and surgery was accompanied by high mortality. Lugol's solution was not yet available. Diabetic cases were common, and since insulin hadn't yet been discovered, many patients were admitted in coma. Such cases usually died. Juvenile diabetes was always fatal.

For many years after 1920, no satisfactory intravenous fluids were available, and subcutaneous saline and proctoclysis were a poor substitute. Electrolyte imbalance in patients with vomiting from peritonitis and bowel obstruction was a major problem, and the inability to control this imbalance usually meant a fatality. Much medical treatment at that period only added to the patient's exhaustion. Repeated high enemas and gastric lavage were routine, and they did little to relieve distention and vomiting.

Prostatic obstruction from about 1920 to 1930 was treated late in the course of the disease, and a two-stage suprapubic prostatectomy was done.

From six to 12 weeks of care was required of the attending physician. Contrast that with present-day treatment. Now, with early diagnosis and treatment by instrumental means, the patient is home within a week. During those same years, colon obstruction from cancer was common, multiple-stage operations were necessary, and the patient often died as a result of the preliminary colostomy. Weeks of hospitalization were necessary before recovery. Now, most cases are diagnosed before obstruction occurs, and after careful medical preparation, a single operative procedure is carried out, and the patient is home in 10 days. Care of these major illnesses a generation ago was time-consuming and costly, and hospital beds were tied up for long periods of time.

THE 1930'S AND 1940'S

But improvements in roads and transportation, as well as in methods of treatment, continued. From 1935 on, most of the obstetrical cases were taken care of in the hospital with much less effort and time. The roads were being improved through the construction of higher grades and the application of hard surfaces, and in the winter we had snow plows to keep them open. How much easier it was for a doctor to care for a greater number of cases, and how much less was his expenditure of time and effort!

Town-home and country calls were fewer, and they were more easily made. The seriously ill patients were cared for in the hospital. X-ray was in common use, and much better medical care was provided in all sorts of cases. More accurate diagnoses had been made possible by means of x-ray, laboratory and other modern methods, and by the fact that patients had begun presenting themselves earlier in the course of a disease. Rarely, nowadays, are patients first seen with ruptured appendices, for they are aware that they must consult the doctor early, and surgery can be performed before rupture occurs. Then, the patient recovers quickly and is home in five or six days. In the few cases of perforation, antibiotics, gastric suction and intravenous fluids bring prompt recovery in the majority of instances.

From 1940 on, most doctors had disappeared from the smaller towns in our area, for modern transportation and treatment technics had lessened the need for them there. Hard-surfaced roads, modern cars and increased utilization of hospital and office care made it possible for fewer doctors to care for increasing numbers of patients. Little of the doctor's time was taken up making home and country calls. Home deliveries were a thing of the past. Doctors then and now, with well-equipped offices and hospitals, with trained assistants, and with immunization technics, transfusions, antibiotics and other new drugs and procedures, have been able to care for many more patients, and they now

have facilities with which to provide a much higher type of medical care than could physicians a generation ago.

MEDICINE IN THE PRESENT DAY

Figures are often compiled showing how many patients a doctor can see in a day or in a week. Actually, such figures mean little. What does count is the quality of medical care given and the type of cases cared for. A doctor who treats chiefly minor illnesses and accident cases and does immunizations can see a large number of patients in a single day. Another physician who cares for major illnesses, does complete checkups or does consultation work will see only a few cases in the same length of time.

The present-day doctor, from my observation, is just as conscientious and is just as much interested in his patient's welfare as was his predecessor. These present-day doctors still work long, irregular hours, and are on call for night work and emergencies unless they provide a substitute. Fortunately, most present-day patients are educated to consult their doctors during regular consultation hours. Better transportation, and the patient's shorter hours of employment, also constitute important factors.

After reviewing the changes in medical practice over the past 40 or 50 years, I wonder what medicine in Iowa will be like after another half century. Marvelous new developments seem just over the horizon, thanks to expanded research. A smaller number of doctors will be able to care for ever more patients, and thanks to improved sanitation and preventive medicine, many past and present-day diseases will rarely be seen. Few present-day medical graduates after eight years of medical training are willing to locate in the very small towns of Iowa, and even the few who do start work there are unlikely to stay. One reason is that too many of the rural patients go to large towns and cities for medical attention. They are willing to call the local doctor at night and in emergencies and bad weather, but far too many of them take all major problems to medical centers many miles from their homes. There may possibly be two or three hundred small towns in Iowa which, for their convenience, would like to have doctors of their own, but there are relatively few of them that actually *need* local physicians. In northwest Iowa at the present time, I know of only one or two towns that have no doctor and actually need one. It is so easy now to get the patient to the doctor even if he is located 10 or 15 miles away.

SOME PROBLEMS AND SOME POSSIBLE SOLUTIONS

In Iowa, as in other states, too many younger doctors are going into specialties, or if they are general practitioners, they are locating in the larger

cities. This problem has two solutions. One would be to convince younger general physicians that excellent opportunities exist in the smaller communities, many of which have good hospital facilities. These communities offer fine medical opportunities where the pressure of life and competition is much less rugged than in the crowded cities. The preceptor program is helping bring this fact home to medical-school seniors.

The second solution, as I see it, would involve a change in the emphasis in medical education. At present, highly-trained specialists in each department of our medical schools glamorize the specialties, and as a result the students become convinced that four years of medical training and one year of internship are inadequate preparation for the practice of medicine. Yet, I am personally acquainted with many young physicians so trained who are providing a high quality of medical care in their communities, and thus are disproving this assumption. Possibly we could use more experienced general practitioners as teachers in our medical schools—men who would teach the basic facts of clinical medicine so as to train the student to provide good general medical care to those who need it so much.

In recent years, the military, the Veterans Administration, industry and the research branches of medicine have been using the services of many medical graduates. Although these services are, to a degree at least, invaluable and essential, they do little, immediately, to lessen the case loads of the doctors in civilian practice. To fill the need for physicians, new medical schools are being established, and the older ones are enrolling larger numbers of students. Our own medical school at Iowa City increased its enrollment just a few years ago, and the medical school at the University of Minnesota is now enrolling 30 per cent more students than it has done previously. With an ever-increasing population, more physicians will be needed in the future, and our medical schools will undoubtedly meet this need as they have done in the past.

Whatever the developments in medicine and whatever the part played by a third party in the future, the doctor-patient relationship will still be essential to good medical care, and this relationship will not be replaced by gadgets. Well-trained general practitioners will always be needed, and no doubt as years go by they will be better distributed. These doctors, working with specialists as a well-knit team, will be able to provide the future citizens of our state with medical care of high quality.

The horse-and-buggy doctor is fortunately gone for good, and for the same reasons, so is the horse-and-buggy *patient*!

CAMP FOR CRIPPLED CHILDREN

The Iowa Society for Crippled Children and Adults, Inc. will start this spring to construct its Easter Seal Camp for Crippled Children on a 36.5 acre tract adjacent to Margo Frankel State Park and Woodside Golf Course, north of Des Moines. Ten acres of the land have been given to the Society by Mr. and Mrs. Clarence Yarn, of Des Moines, and the rest is Polk County property that has been leased for a considerable number of years and at a nominal rental by the Board of Supervisors.

More than 30 locations in various parts of the state were studied before the final selection was made. Lake sites had to be ruled out because they were too expensive and were less well adapted to the particular type of water experiences the crippled children should have. The site had to provide topography which would make trails and even remote areas available by wheelchair, and had to facilitate the building of sidewalks. Furthermore, hospital and other emergency facilities had to be nearby. The heavily-wooded Yarn property will offer excellent opportunities for nature study, hikes and camp outs.

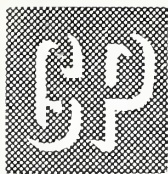
During previous summers, the Society has arranged for its charges to use the "Y" camps near Boone, and the less severely handicapped youngsters will continue to be sent there, even after the opening of the Easter Seal Camp, next summer.

Money is currently being raised for the construction of the necessary cabins and other structures at the Easter Seal Camp. In one money-raising project, the Iowa Federation of Women's Clubs is conducting a napkin sale.

POSTGRADUATE CONFERENCE AT CREIGHTON

The Creighton University School of Medicine will present a postgraduate conference at Creighton Memorial-St. Joseph Hospital, Omaha, on April 14, 15 and 16.

April 14 will be devoted exclusively to surgery; April 15 to obstetrics and gynecology; and both specialties will be represented on the program of April 16. The guest speakers on surgery will be Edwin H. Ellison, M.D., professor and director of surgery at Marquette University; Merle M. Musselman, M.D., professor and chairman of surgery at the University of Nebraska; and James M. Sullivan, M.D., associate professor of surgery at Marquette University. The guest speakers on obstetrics and gynecology will be C. Paul Hodgkinson, M.D., chief of obstetrics and gynecology at Henry Ford Hospital, Detroit; and R. G. Holly, M.D., professor and chairman of obstetrics and gynecology at the University of Nebraska.



Iowa Academy of General Practice

AAGP MEETING IN SAN FRANCISCO

What does the "space age" mean to medicine? How should doctors treat bad burns? What's new in the realm of heart surgery, foot fractures, hypertension and diabetes? These and countless other questions will be answered at the Eleventh Annual Scientific Assembly of the American Academy of General Practice, April 6-9, in the San Francisco Civic Auditorium.

The scientific program will feature 28 prominent physician-authorities. More than 100 scientific and 300 technical exhibits will be prepared for the 7,000 doctors and guests who are expected to attend.

The Congress of Delegates, the Academy's policy-making body, will convene at 2:00 p.m. on Saturday, April 4, in the Fairmont Hotel. Delegates from each of the 49 states, Hawaii, Puerto Rico and the District of Columbia will meet until noon on Monday, April 6, when the scientific sessions will open at the Auditorium.

PUBLIC HEALTH TOPICS

Dr. Walter Judd, the veteran congressman from Minnesota and an Academy member, is to open the Monday afternoon session, discussing the topic "Doctors in a Changing World." A panel on immunology will highlight the 2:00 p.m. session. Dr. Karl F. Meyer, professor emeritus of experimental pathology at the University of California, will guide the discussion, and Drs. Geoffrey Edsall, of the Walter Reed Institute of Research, and Edwin H. Lennette, of the University of California, will review new knowledge of standard immunization agents and procedures.

Following the afternoon recess, Dr. Leroy E. Burney, surgeon general of the United States Public Health Service, will present a discussion on "Public Health and Its Relation to the Practice of Medicine." The final Monday speaker is also from USPHS. James H. Steele, chief of veterinary public health, will review animal diseases transmissible to man, with particular emphasis on rabies and ringworm.

CARDIOLOGY

Heart problems are to open the Tuesday morning program. The effects of dietary fats will be

reported by Dr. Francisco Grande, of the University of Minnesota. The morning's second presentation will be a discussion of hypertension. Dr. Arthur Grollman, of the Southwestern Medical School, will reevaluate this oft-encountered "over 50" disorder, implying that its origin is in the kidneys. Dr. William H. Snyder, of the University of Southern California, will point out that heart stoppage may occur any time, anywhere. Since the nearest doctor must often open the chest and massage the heart at once, step-by-step procedures will be outlined. The final cardiology discussion, dealing with problems of elective heart surgery, will be presented by Dr. Norman E. Shumway, of Stanford University. His talk will include both a review and a "look at the future," in which he will discuss successful heart transplants.

SURGICAL PROBLEMS, CHIEFLY ABDOMINAL

Three surgical lectures are to open the Tuesday afternoon session. In a discussion of convalescence after surgery, Dr. Fred H. Bentley, of Portland, Oregon, will emphasize the importance of treating the patient as a whole. This approach should begin before the operation and continue until the patient is fully recovered. The second member of the surgical trio will be Dr. Joel W. Baker, of Seattle. He will review lower abdominal surgery, emphasizing some unexpected situations that may confront the operating doctor. Many times, an operation for acute appendicitis may turn out to be a difficult emergency. Dr. Bentley will answer the question, "What next?" The lower abdomen is also to be the subject of the third surgical speaker. In spite of familiarity with the common procedures in hernia repair, physicians still encounter many complications. Dr. N. Frederick Hicken, of the University of Utah, will point out ways of minimizing them.

During the final hour of the Tuesday program, attention will be directed to burn therapy. Dr. W. D. Snively, Jr., of Evansville, Indiana, and Lt. Col. E. H. Vogel, of Fort Sam Houston, Texas, will stress immediate and effective therapy by general practitioners, since GP's are often the first doctors to treat severe burns. This discussion will help the family physician to learn more about the body's physiologic reaction to burns.

OBSTETRICS AND GYNECOLOGY

Obstetrics and gynecology will open the Wednesday, April 8, program. Both prematurity and postmaturity will be discussed, in turn, by Drs. James L. Dennis, of San Francisco, and Mitchell J. Nechtow, of the University of Chicago. Dr. Dennis says the premature baby is a dual problem; one part is prevention, and the other part is care. On the opposite side of the coin, hazards to the unborn child call for proper judgment and individual evaluation, Dr. Nechtow points out.

Problems common to almost all women will be taken up by Drs. Ernest W. Page and Edmund W. Overstreet, both of the University of California. Dr. Page, whose topic is premenstrual tension, will present several theories about its etiology and will evaluate the role of the patient's own emotional stability. The changing concepts in menopause therapy will be reviewed by Dr. Overstreet, and he will also show the correlation of ovarian activity with many other body processes. He will also suggest that the post-menopausal need for estrins may be much more frequent and more prolonged than has heretofore been suspected.

ORTHOPEDICS

Attention will turn to orthopedics in the afternoon session. Dr. J. Vernon Luck, of the University of Southern California, will speak on soft-tissue and joint injuries to children, and will show examples of the dramatic results that are possible through the substituting of muscles where there is permanent nerve and muscle damage. The second speaker, Dr. Walter Blount, of Marquette University, will take up some of the peculiarities of children's fractures. He will point out that elbow fractures can be most troublesome in young patients. The final orthopedic lecture, dealing with foot deformities in the newborn, will be presented by Dr. John H. Moe, head of the Department of Orthopedic Surgery at the University of Minnesota.

NEUROLOGY

The final scientific session Wednesday afternoon will feature two discussions on neurology. A consecutive parade of headache and head-pain patients, each with objective, verifiable neurologic symptoms, will be presented by Dr. Jose Garcia Oller, of New Orleans. He will demonstrate that practically all of these ailments can be diagnosed by the general practitioner. To complete the neurologic phase of the 1959 Assembly, Dr. Donald Macrae, of the University of California, will speak on the Parkinsonian syndrome. He will point out that although diagnosis is usually easy, other tremors may frequently be mismanaged.

DIABETES AND SPACE MEDICINE

The first session of the final day's program will be devoted to a three-topic symposium on the still-vital subject of diabetes. Daily living with the disease, various diets, the influence of exercise and new methods of therapy will be discussed by Dr. Richard M. Johnson, of the University of Southern California. Dr. B. E. Lowenstein, of Fort Howard, Maryland, will emphasize the fact that sugar is no longer the diabetic's bogey man. Excessive dietary fat is now assigned that role. The third speaker, Dr. Laurance W. Kinsell, of the University of California, will deal with the relationship of diabetes to degenerative vascular disease. In both types of clinical diabetes, he will point out a significant similarity between their strong hereditary tendencies and a major tendency toward degenerative vascular disease.

To climax the four-day meeting, Captain Norman L. Barr, USN, will discuss the nature of adverse conditions and forces in space travel, together with the human and animal responses to them. The entire lecture will be presented by closed-circuit color television, using a radically new telecasting process called Eidophor. Its use at the Assembly will mark its initial appearance on the scientific program of a medical association.

EXHIBITS AND AWARDS

More than 100 scientific exhibits in the Auditorium will supplement the scientific lectures. Most of these will be closely related to portions of the program. Among them will be exhibits on man and space, allergies, poison control and the use of ice in physical medicine. Progress made in fields serving the medical profession will be featured in the 300 technical exhibits.

The Fairmont Hotel will be the scene of the President's Reception and Dance, Wednesday, April 8. Preceding the reception, Dr. Fount Richardson, of Fayetteville, Arkansas, the Academy's president-elect, will receive the gavel from President Jackson. Ladies' entertainment is to be under the direction of Mrs. A. J. Franz, of San Francisco. Tours of the city have been planned for the doctors' wives.

Additional highlights of the Assembly will include the presentation of 10 general practice residency training awards of \$1,000 each. These will go to interns or young physicians who have completed their medical training. The program is carried on through a grant from Mead Johnson & Co., of Evansville, Indiana. The two Academy members who are judged to have contributed the most significant articles published in *GP*, the Academy's monthly magazine, during 1958 will receive Ross Awards. These prizes, of \$1,000 each, are presented by Ross Laboratories, of Columbus. The winners are selected by three medical school deans.

STATE DEPARTMENT OF HEALTH


COMMISSIONER

SCARLET FEVER AND RELATED STREPTOCOCCAL INFECTIONS

Four years ago, on July 13, 1954, at the request of the State Department of Health, the Iowa State Board of Health approved certain modifications for the control of family or other close contacts of cases of scarlet fever. Those changes provided, in effect, that contacts might return to school or to work as food handlers or teachers 48 hours after receiving prophylactic doses of penicillin (600,000 units if given hypodermically). Such contacts, when returning to school or to work, were each required to present a physician's statement to the effect that the penicillin had been given at a particular hour of a specified day, so that it might be ascertained that no less than 48 hours had elapsed between the administration of the antibiotic and the individual's return to school or to work. If the penicillin were not given, the previous restrictions were to be observed.

At that time, the regulations regarding the scarlet fever patient himself were not changed.

The requirements established by the State Board of Health on January 13, 1959, are as follows:

The case is to be isolated or segregated for a minimum of seven days from onset if clinically recovered and if therapeutic amounts of sulfonamides and/or antibiotics have been given at least 48 hours before release. If sulfonamides and/or antibiotics have not been given, the 14-day minimum period of isolation and segregation remains.

For family or other close contacts of scarlet fever cases, the use of sulfonamides and/or antibiotics in prophylactic amounts has now been authorized, rather than just prophylactic penicillin (600,000 units, hypodermically).

The Department of Health made its request for changes after its Division of Preventable Diseases had consulted the medical societies of 14 representative counties in the state. These new rules bring the Iowa regulations into accord with those recommended by the Committee on Communicable Diseases of the American Public Health Association and the U. S. Public Health Service.

Since many Iowa people who are interested in communicable-disease control, particularly in schools, are using the State Department of Health's large, white wall chart entitled "Communicable Diseases Among School Children," it is suggested that they make the following changes on the chart until such a time as the Department can print new ones and get them distributed. The five boxes to be changed are numbers 36, 47, 58, 69 and 80, and the new wordings are shown in the accompanying illustration.

DES MOINES WILL HOST 12-STATE CONFERENCE

Public health workers from 12 midwestern states will gather at the Savery Hotel, Des Moines, April 1-3 for the tenth annual meeting of the Middle States Public Health Association. The organization had its first meeting in the Iowa capital in 1949, when Dr. Walter L. Bierring had a leading part in forming it and was elected its first president. The yearly meetings are held in rotation in the member states.

About 500 people are expected to be present for lectures and discussions of such subjects as environmental sanitation, laboratory technics, epidemiology, nutrition, dental health, maternal and

No. 36	No. 47	No. 58	No. 69	No. 80
Exclude during isolation. Minimum period of 7 days from onset if clinically recovered and if therapeutic amounts of sulfonamides and/or antibiotics have been given at least 48 hours before release.	May return to school when instructed and released to live elsewhere. <i>Children remaining in the home with the case may return to school 48 hours after receiving therapeutic amounts of sulfonamides and/or antibiotics. They must present physician's dated and signed statement.</i>	Exclude from school immediately. Readmit when segregated from case, after one week from last possible contact with case.	Should remain in school. Prophylactic sulfonamides and/or antibiotics advised to prevent carrier development.	Should be examined daily for early signs and symptoms for one week after last possible exposure, unless school is informed by physician's statement that prophylactic sulfonamides and/or antibiotics have been given.

Counties	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
Humboldt					4					1			5
Ida					1								1
Iowa											1		1
Jackson					1			1			4	1	7
Jasper	1	1	2	2				2		1			9-2
Jefferson			2				2			1		1	6
Johnson		2	2	1	2				2	3			12-2
Jones			1	1		1	1	2		1			7-1
Keokuk												2	2
Kossuth			1										1
Lee		2	1		1		2		1	2			9
Linn	2	4	3	5	3	4	4	6	4	2	3	2	42-1
Louisa							1		1				2
Lucas												1	1
Lyon			1										1
Madison								1					1
Mahaska							3	1	1				5
Marion		1	1	1				1					4
Marshall	1				1	1		1		1			5
Mills								1	1			1	3
Mitchell					1			1			1		3
Monona	1		1										2
Monroe				1				1					2
Montgomery							1						1
Muscatine				1	1			1					3-1
O'Brien	1		1	1									3
Osceola									1				1
Page							2			1		1	4
Palo Alto											1		1
Plymouth													
Pocahontas											1		1
Polk	6	2	10	8	11	2	7	9	3	4	10	5	77-1
Pottawattamie	3			1	3			2			3	2	14
Poweshiek												1	1
Ringgold			1	1		1			2				5
Sac	1										2		3
Scott	2	6	5	1	4	4	4	4	2	4	4	2	42-1
Shelby									1				1
Sioux	1			1							1		3
Story	1	2		1	1	1	1			1		1	9
Tama			1					1		1			3
Taylor	1												1
Union		1											1
Van Buren													
Wapello				2			1	2	2		2	1	10
Warren					1						1		2
Washington			1		1	2		1					5
Wayne					1								1
Webster		1			1			2	3	2			9-1
Winnebago			1							1			2
Winneshiek				1									1
Woodbury	2	3	2	2	3	1	1	2	2	1	3	1	23
Worth												1	1
Wright	1									1			2
Total	38	38	52	45	68	33	49	56	40	39	60	33	551-12*
	38	76	128	173	241	274	323	379	419	458	518	551	539

* Twelve cases have been deleted because of change of diagnosis.

IOWA COMMITTEE OF 100 FOR HEALTH

Iowa's "Committee of 100 for Health" held its first 1959 meeting on January 16, in Des Moines. Dr. Franklin H. Top, chairman of the Committee and professor and head of the S.U.I. Department of Hygiene and Preventive Medicine, said one of the major actions of the meeting was the creation of eight sub-committees, each devoted to a special area of concern in the health field.

The Committee of 100 was formed in 1957 by the Iowa Public Health Association, and prominent Iowans from many fields of endeavor were invited to join it. The group meets three times annually, and its principal aim is to foster study of health problems at both the state and the local levels.

The sub-committees formed during the Des Moines meeting are to study:

- (1) Means of helping parents face their responsibility in sex and venereal disease education
- (2) Ways of evaluating health information presented in newspapers, magazines, and television and radio programs
- (3) Ways of encouraging the use of talents now being wasted in every community through the early retirement of older citizens
- (4) Technics for compiling lists of community, county and state health resources in Iowa
- (5) Ways of improving urban and fringe-area health conditions as they relate to water, sewage, sanitation and housing
- (6) Means of improving restaurant sanitation and helping inform Iowa citizens of the importance of restaurant sanitation
- (7) Ways of combatting alcoholism
- (8) Ways of bringing about a realization of the importance of county, city, town and township boards of health.

"We envision these sub-committees," Dr. Top said, "not as groups that will complete their projects within a short time, but as groups of people who desire to become acquainted with the problems through general reading and exchange of information." The hope is that with a large group of prominent citizens interested in the major health problems, meaningful and effective action can ultimately be taken. "Real action may develop slowly," Dr. Top admits, "but the results will be well worth the effort."

Already, there is evidence of action being taken in local situations, he said, as a result of one Committee member's hearing from another how the second man's community handled a similar problem.

ORTHOPEDISTS USE SAFETY BELTS

Dr. Murray Gibbens, of Denver, chairman of the American Academy of Orthopedic Surgery's committee on auto safety is reported to have said that surveys he has taken among his fellow specialists reveal that between 50 and 75 per cent of ortho-

pedists have safety belts in their automobiles. "I wouldn't fail to snap on the safety belt if my trip were no farther than to the corner drug store," he told reporters in Chicago. "Failure to use safety belts for city driving, if you have them, is like letting your life insurance payments lapse. Many low-speed accidents turn out to be fatal accidents."

MORBIDITY REPORT FOR MONTH
OF JANUARY 1959

Disease	1959 Jan.	1958 Dec.	1958 Jan.	Most cases reported from these counties
Diphtheria	1	0	2	Crawford
Scarlet fever	351	174	166	Allamakee, Jefferson, Johnson, Polk
Typhoid fever	0	1	0	
Smallpox	0	0	0	
Measles	2,638	1,630	99	Appanoose, Boone, Montgomery, Polk, Scott
Whooping cough	11	13	5	Dubuque, Poweshiek
Brucellosis	10	17	2	Mahaska, Winneshiek
Chickenpox	749	389	545	Des Moines, Dubuque, Linn, Scott
Meningococcic meningitis	0	2	3	
Mumps	402	362	510	Chickasaw, Clay, Davis, Polk, Scott
Poliomyelitis	0	9	0	
Infectious hepatitis	24	4	13	Greene, Jackson, Marion
Rabies in animals	20	18	12	Benton, Hardin, Washington
Malaria	0	0	0	
Psittacosis	0	1	0	
Q fever	0	0	0	
Tuberculosis	39	33	38	For the state
Syphilis	100	90	108	For the state
Gonorrhea	66	82	51	For the state
Histoplasmosis	0	6	0	
Food intoxication	60	0	0	Clayton
Meningitis (type unspecified)	1	0	0	Pottawattamie
Diphtheria carrier	0	0	0	
Aseptic meningitis	0	2	1	
Salmonellosis	1	6	4	Webster
Tetanus	0	0	0	
Chancroid	0	0	0	
Encephalitis (type unspecified)	1	2	1	Scott
H. influenza meningitis	0	1	2	
Amebiasis	1	0	2	Boone
Shigellosis	5	2	0	Chickasaw, Polk, Scott
Influenza	27	7	47	Clay, Winneshiek

WOMAN'S AUXILIARY to the IOWA STATE MEDICAL SOCIETY

1959 Annual Meeting, Des Moines

PROGRAM

MRS. H. C. MERILLAT, *Presiding*

Sunday, April 19

- 2:00-4:00 Pre-Convention Board Meeting, East Room, Hotel Savery—State officers, councilors, county presidents, and committee chairmen
6:30 Dutch Treat Supper (all Board members, convention committee chairmen, and husbands), Hotel Kirkwood

Monday, April 20

- 8:00-4:00 Registration, Mezzanine, Hotel Savery—All physicians' wives welcome
8:00-11:00 Hospitality Room—Terrace Room, Hotel Savery
Hostesses—Page County Auxiliary—District XI
9:30 Conference of Delegates—Terrace Room
Call to Order—Mrs. H. C. Merrillat, Des Moines, president
Invocation—Rev. John R. Ryan, librarian of Dowling High School
Introduction of National Woman's Auxiliary representative
Auxiliary Pledge—Mrs. G. S. Atkinson, Oskaloosa
I pledge my loyalty and devotion to the Woman's Auxiliary to the American Medical Association. I will support its activities, protect its reputation and ever sustain its high ideals.
Reading and Adoption of Convention Rules—Mrs. J. A. Downing, Des Moines, parliamentarian
Recommendations of Reading Committee (for acceptance of previous annual meeting minutes)
Treasurer's Report—Mrs. E. A. Vorisek, Des Moines
Report of Finance Committee—Mrs. R. E. Hines, Des Moines
Report of Auditing Committee—Mrs. R. E. Hines, Des Moines
Report of Nominating Committee (first reading)—Mrs. L. R. Hegg, Rock Valley
Election of 1959-1960 Nominating Committee
11:00 "Volunteer Service for Psychiatric Rehabilitation"—R. O. Emmons, M.D., ISMS Mental Health Committee
Introduction of councilors and county presidents
In Memoriam
11:45 Recess for Luncheon
12:15 Luncheon Honoring Past Presidents, Terrace Room, Mrs. H. C. Merrillat, Des Moines, presiding
Luncheon Music—Mrs. E. A. Vorisek, Des Moines
Greetings—Mrs. J. T. Bakody, Des Moines, president, Polk County Auxiliary
Response—Mrs. E. A. Larsen, Centerville, state president-elect
Introduction of Convention Chairmen—Mrs. L. R. Pearlman, Des Moines

Introduction of Guests

- 2:00 Spring Style Show—Norman Cassidy, Inc., Mr. Arthur Stein, commentator

Tuesday, April 21

- 8:00-12:00 Registration, Mezzanine Floor, Hotel Savery
8:00-11:00 Coffee—Hospitality Room, Terrace Room, Hotel Savery
Hostesses—Lee County Auxiliary—District VIII
9:30 Conference of Delegates—Terrace Room—All physicians' wives welcome
Report of Nominating Committee (second reading)—Mrs. L. R. Hegg, Rock Valley
Election Instructions—Mrs. J. A. Downing, Des Moines, parliamentarian
Election of Officers
Election of Delegates to National Auxiliary Convention
Report of Reference Committee
10:30 Workshop—"This Is Our Best"—Mrs. B. F. Kilgore, Des Moines, moderator
10:50 Legislative Report—Noble W. Irving, M.D., chairman, ISMS Legislative Committee
11:10 Installation of New Officers—Mrs. C. H. Flynn, Clarinda
Introduction of State Committee Chairmen
11:30 Recess for Luncheon
12:00 President's Luncheon—Terrace Room, Mrs. D. H. King, Spencer, presiding
Invocation—Mrs. R. F. Nielsen, Cedar Falls
Luncheon Music—Mrs. E. A. Vorisek, Des Moines
Introduction of Guests:
Representative of Woman's Auxiliary to the American Medical Association
Walter D. Abbott, M.D., president, Iowa State Medical Society
J. W. Billingsley, M.D., president-elect, Iowa State Medical Society and chairman of Advisory Board to the State Auxiliary
G. H. Scanlon, M.D., member of Advisory Board
J. H. Sunderbruch, M.D., member of Advisory Board
R. F. Birge, M.D., secretary, Iowa State Medical Society
D. L. Taylor, executive director of the Iowa State Medical Society
Community Service Award—Mrs. R. H. Moe, chairman

ATTEND THE PRESIDENT'S COFFEE

Hospitality Room, 8:00-9:30
Monday and Tuesday Mornings
MEET YOUR STATE OFFICERS!

Essay Contest Award—W. D. Abbott, M.D., president, ISMS

Inaugural Address—Mrs. E. A. Larsen, Centerville

Presentation of Past-President's Pin—Mrs. J. F. Gerken, Waterloo

Courtesy Resolutions

Adjournment

2:15 "Hats Out of This World"—Wolf's, Inc.—Ann Cameron, commentator

3:30 Post-Convention Board Meeting, East Room, Hotel Savery

7:00 Banquet, Terrace Room, Hotel Savery

9:00 "An Evening in New Orleans"—Dance (informal)—Grand Ballroom, Hotel Savery. (Benefit Auxiliary Health Educational Loan Fund)

OUR PRESIDENT SAYS—

Once again it will be a pleasure to welcome the wives of Iowa physicians to the annual meeting of the Woman's Auxiliary to the Iowa State Medical Society. The meeting will be held in Des Moines at the Hotel Savery, April 20 and 21.

We will do our best to make your stay a pleasant one. Each morning, coffee will be served in the Hospitality Room. Plan to meet your friends there. Auxiliary members will serve as hostesses, and will make you feel at home.

There will be a conference of delegates on both Monday and Tuesday morning, and all doctors' wives are invited to attend these business sessions and to get first hand information about the Auxiliary and its activities.

The Monday luncheon honoring our past state presidents will be a lovely affair that you won't want to miss. One of our own members will play luncheon music for you, and a showing of the newest spring fashions will please you also. The Tuesday luncheon will honor the president and the president-elect, and representatives of the State Medical Society will be our guests. A representative from the National Auxiliary will be a featured speaker during the convention, and there will be other special attractions for which final plans have not yet been completed.

There will be a social hour and benefit dance, with proceeds going to the Woman's Auxiliary Health Educational Loan Fund (formerly the Nurses' Loan Fund), following the State Medical Society's annual banquet.

AN EVENING IN NEW ORLEANS

Tuesday, April 21, 9:00-12:00

Grand Ballroom—Hotel Savery
Benefit

Woman's Auxiliary Health Educational Loan Fund

Bill Austin's Orchestra

Standard Medical & Surgical Company will
sponsor the social hour from 8:30

You will have plenty of free time for shopping, visiting with your friends and viewing the exhibits with your husband. You won't want to miss *any* of the 1959 annual meeting. Remember the dates—April 20 and 21. Circle them on your calendar! A good program has been planned for you, but without you there can be no convention.

THE MEANING OF AUXILIARY MEMBERSHIP

In 1948 the Auxiliary had 462 members. Our total membership is now well over 1,000. Doctors' wives throughout the state realize the advantages of belonging, and are encouraging their friends to join.

Membership in the Auxiliary undoubtedly means a number of different things to different women. There are as many basic ideas about the chief objectives of Auxiliary work as there are Auxiliary workers. To me, membership in the Auxiliary means an opportunity to serve the medical profession.

A doctor's wife reflects, in a small degree, the dignity and unselfishness of her husband's profession, and she must be ever conscious of the fact that as a doctor's wife she must assume responsibilities toward her community. She is a powerful force in shaping the attitude of the lay public toward the medical profession. She is a liaison between the public and the doctors, and is often able to help the public understand the aims, policies and functions of doctors, individually and collectively, as she participates in the work of various civic groups.

If the Auxiliary as an organization is successful in awakening each individual member to an awareness of her potentialities in the service of medicine, it will have fulfilled one of its most important objectives—if not, as I am inclined to think, its principal one.

—MRS. H. C. MERILLAT

SAFETY FIRST

Time may be precious, but life is priceless.

DUES WERE OVERDUE ON MARCH 1

Some members pay their dues when due;

Others never do.

What do you do???

To county treasurers and to members-at-large who have not remitted dues for 1958-1959 as they were requested to do, I renew my plea.

To those who have paid, I express gratitude for their promptness.

County treasurers should include both state and national dues in a single check made payable to the State Auxiliary treasurer.

MRS. ELMER A. VORISEK,
Treasurer

THE AMERICAN MEDICAL EDUCATION FOUNDATION

What is the AMEF? The American Medical Education Foundation is a non-profit, tax-exempt organization established in 1951 by the leaders in medicine to collect money from physicians and their wives for the support of the nation's medical schools. There is a similar organization to collect funds for that purpose from businessmen and corporations.

The AMEF is sponsored by the AMA, and the AMA pays all of its operating costs. Every dollar contributed goes to the medical schools.

What, exactly, does AMEF money pay for? It helps finance the teaching programs of the 85 approved medical schools in the country. The schools themselves determine where the money is most needed. It may be used for much-needed modern teaching equipment, for salary increases so that the schools may keep teachers who would otherwise be forced to leave, or for the establishment of new departments so that the schools may keep abreast of scientific advances.

Why do American medical schools need financial help? Student tuition pays only 18.2 per cent of the cost of the student's medical education, and postwar inflation, combined with the great changes that have taken place in medicine, has caused the schools' expenses to soar.

Private support must be forthcoming, or the schools will be forced to turn to the federal government for help.

Why should the doctor and his wife give? The doctor, through the medical society, and his wife, through the Auxiliary, must lead the way if other people are to feel the urgency.

How much money has been contributed? Each year since its inception in 1951, the AMEF has contributed one million dollars to the nation's medical schools.

What is the Auxiliary's role in AMEF? Each year the Woman's Auxiliary increases its interest in AMEF. Through its various activities—benefits, memorials, articles made for sale and direct gifts—the Auxiliary works hard at raising money for the nation's medical schools.

How can I help? Participate in all your Auxiliary's AMEF activities. Use the sympathy, utility and in-appreciation cards. Give to the AMEF. (You may earmark your contribution for the school of your choice.)

Individual contributions should be made through your county or state AMEF chairman.

Your help is needed NOW!

MRS. LESTER R. HEGG,
State Chairman, AMEF

COUNTY AUXILIARIES

Black Hawk

On January 31, the Black Hawk County Medical Auxiliary sponsored a semi-formal dinner-dance called "The Tranquilizer Ball" at the Elks Club, in Waterloo. The proceeds were donated to the Black Hawk County Mental Health Center. Mrs. C. J. Ludwig and Mrs. Wm. Telfer were general chairmen, and 400 people had a good time there.

During the floor show, much applause was given the girls in the skit entitled "Most Happy Medic." The script had been very cleverly written and was capably directed by Mrs. Telfer, and in it Mrs. R. D. Acker, Mrs. R. F. Nielsen, Mrs. L. J. Henderson, Mrs. Louis Winninger, Mrs. Vernon Plager, Mrs. R. S. Gerard, Mrs. Richard Waldorf, Mrs. C. P. Addison, Mrs. Carl Hanson, Mrs. A. W. Devine, Mrs. John Walker, Mrs. G. D. Phelps and Mrs. A. W. Woodward provided amusing caricatures of physicians. Mrs. Fred Gerken accompanied them on the piano.

Dinner music was played by Mrs. Eugene Smith at the organ, and by Margaret Dravis at the piano. The table and ballroom decorations carried out the "tranquilizer" theme and provided a great deal of amusement.

Dallas-Guthrie

On January 15, the Dallas-Guthrie Medical Auxiliary met for dinner at Alice's Spaghetti Land, near Dallas Center.

Mrs. E. E. Lister, the newly-elected president, presided at the meeting which followed. Committees for the year were appointed. Mrs. H. C. Merillat, the state president, and Mary Berry, R.N., the Dallas County nurse, were guests.

Dubuque

"Alaskapades" was the title the Auxiliary to the Dubuque County Medical Society chose for its Mardi Gras ball, held on January 31 at the Elks Club, in Dubuque. Proceeds from this annual event help to finance scholarships at Dubuque's two nursing schools.

Mrs. Stephen O'Brien and Mrs. Richard Lee were co-chairmen of the event; Mrs. John Moberly and Mrs. Thomas Piekenbrock shared responsibility for displays; and Mrs. Leonard Zelinskas, Mrs. Frederick Fuerste, Jr., Mrs. Newton Chun and Mrs. William Province took great care to make sure that the decorations were typical of the forty-ninth state.

Grundy

On Wednesday, February 4, the Grundy County Medical Auxiliary entertained the Future Nurses Clubs of Grundy Center, Reinbeck and Wellsburg in the Memorial Room at the Grundy County Memorial Hospital. Forty club members and their mothers attended.

A film on medical technology was shown, following which David Harper, the hospital's laboratory technician spoke briefly. Mrs. McAllister, the hospital dietician, and Mrs. J. E. Rose had arranged a beautiful table with a centerpiece of carnations and snapdragons. Mrs. P. F. LaPorte poured coffee and Mrs. J. R. Jaquis served punch. Mrs. E. A. Reedholm, Mrs. R. J. Meyer, Mrs. C. H. Bartruff and Mrs. H. L. Mol assisted as hostesses.

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On January 15, the Page County Medical Auxiliary met at the lovely new home of Mrs. George Powers, in Shenandoah, and enjoyed a delicious covered-dish dinner.

Mrs. Wayland Maloy told the group of her recent trip to Bremerhaven, Germany, where she visited her son John and his wife and child. The following officers were elected for 1959-1960: Mrs. Karl Catlin, president-elect; and Mrs. Larry Strathman, secretary-treasurer. Mrs. George Powers succeeds to the presidency this spring.

Polk

The Polk County Medical Auxiliary had a benefit bridge and canasta party at Hoyt Sherman Place, Des Moines, in February. A dessert luncheon was served. The co-chairmen for the event were Mrs. Ralph Dorner and Mrs. Dennis Kelly, Jr.

Proceeds will be used for work with the Future Nurses Clubs of the high schools in Polk County.

A THOUGHT ON QUALITY

If a thing is old, it is a sign that it was fit to live. Old families, old customs, old styles survive because they are fit to survive. The guarantee of continuity is quality. Submerge the good in a flood of the new, and the good will come back to join the good the new brings with it. Old-fashioned hospitality, old-fashioned politeness, old-fashioned honor in business had qualities of survival. These will come back.

—EDWARD V. RICKENBACKER

DO YOU KNOW??

March has been designated **National Mental Health Month**. You will want to plan your program accordingly.

It is not too late to initiate the valuable "**Milestones to Marriage**" letters in your local high school. Offer them for the approval of your school principal or superintendent.

Doctor's Day—March 30, each year—commemorates the occasion in 1842 when Dr. Crawford Long, of Georgia, initiated the technic of anesthesia. His contribution to medicine is typical of the work that all doctors of medicine do for the relief of pain. Plan to recognize this day in order to show your appreciation to the physicians of your community and to make sure your fellow citizens recognize the service they are rendering.

The **annual meeting** of the State Auxiliary will be held in Des Moines on April 20 and 21. Important plans are in the making.

Specially designed notepaper is still available at the Central Office or from Mrs. L. R. Hegg, of Rock Valley. Proceeds from its sale go to the American Medical Education Foundation.

The time remaining for starting an **essay contest** is very short. The topics are "The Advantages of Private Medical Care" or "The Advantages of the American Free Enterprise System." Package libraries on those subjects are available at the Central Office.

REPORTS

Elect your delegates and alternates as early as possible, and send their names to Mrs. W. C. Shinkle, 307 Forty-ninth Street, Des Moines 12, secretary of the State Auxiliary. She needs those names so as to be ready for registration at the annual meeting.

The Press and Publicity Chairman, Mrs. J. H. Dickens, 3627 Davison, Des Moines 10, will soon be preparing the scrap book for display at the annual meeting. Have you been sending newspaper clippings to her?

Your meeting notices and reports of activities should be written up, not only for your local newspapers but for the **WOMAN'S AUXILIARY NEWS** as well. An occasional picture will be welcome, too, but be sure to send a copy of the original photo, rather than the reproduction of it that appeared in your newspaper. Send these items either to Mrs. E. T. Burke, 601 Southwest Forty-second Street, Des Moines 12, or to the Central Office before the tenth of the month.

WOMAN'S AUXILIARY TO THE IOWA STATE MEDICAL SOCIETY

President—Mrs. H. C. Merillat, 116 Lincoln Place Drive, Des Moines 12

President-Elect—Mrs. E. A. Larsen, Centerville

Secretary—Mrs. Wm. C. Shinkle, 307 49th St., Des Moines 12

Treasurer—Mrs. E. A. Vorisek, 6205 Woodland Rd., Des Moines 12

Editor of THE NEWS—Mrs. E. T. Burke, 601 S.W. 42nd Street, Des Moines 12

Asst. Editor of THE NEWS—Mrs. D. F. Crowley, Jr., 663 44th Street, Des Moines 12

DEDICATION

The members of the faculty at the S.U.I. College of Medicine wish to dedicate the papers they have prepared for this issue of the JOURNAL to three of their colleagues whose deaths occurred recently.

Robert E. Evans, Ph.D.

On the early afternoon of February 7, 1958, the associates and friends of Dr. Evans were shocked beyond belief by the sudden news that he had suffered a fatal coronary occlusion. He had felt indisposed while at his office, and unnoticed had walked to the University Hospital, where he was stricken.

Dr. Evans, a native of Massachusetts, had been a member of the staff of the College of Medicine since 1950. He was assistant director of the State Hygienic Laboratory and an assistant

professor in the Department of Hygiene and Preventive Medicine.

"Bob," as he was known to his vast circle of friends, was sincerely devoted to duty and possessed a high degree of scientific integrity which greatly inspired others. His gentle, friendly, co-operative spirit and serene composure will be remembered by all who knew him.

Higdon Bryant Elkins, M.D.

Dr. Elkins died on November 29, 1958, of acute pulmonary occlusion.

He received his B.S. and M.D. degrees from Washington University, St. Louis, the latter in 1930. Following his internship at St. Luke's Hospital, St. Louis, and residencies in medicine and radiology, he practiced industrial medicine in Ely, Nevada, until he went into Army service. From 1942 until 1946 he was radiologist at various Army stations in the United States and in the E.T.O. He was discharged in

1946 with the rank of major. After the war, Dr. Elkins returned to Iowa City and was promoted through the academic ranks to full professor of radiology in 1956. In November, 1936, he was married to Katherine Eberhardt. He is survived by his wife and by his mother, Sara Elkins.

"H. B." or "Himmie," as he was known to his associates and friends, was particularly interested

in radiation therapy. In collaboration with Dr. H. D. Kerr and Dr. R. S. Flocks, he instituted the use of radioactive gold for the treatment of carcinoma of the prostate. Later the same therapy was applied to carcinoma of the ovary.

His intense interest in and concern for his patients were apparent to the casual observer and were a source of strength for the individuals under his care. He spent much of his time teaching residents in his own department and in other services as well. Even though ill, he continued his teaching from his room in the hospital. His outside interests, music and radio construction, took some of his time.

Dr. Elkins was a diplomate of the American Board of Radiology, a fellow of the American College of Radiology, and a member of the Radiological Society of North America, the American Roentgen Ray Society and the American Radium Society. He was a charter member of the Society of Nuclear Medicine.

He was a true physician, loved and trusted by his patients, respected and esteemed by the residents, staff and members of our profession.

Richard B. Rhody, Ph.D.

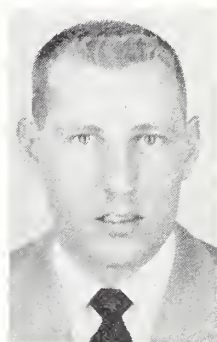
Richard Blaine Rhody was born on September 14, 1921, at Royal Center, Indiana. In 1943, he was married to Annabelle Powers. They had one son, Kurt, who was eight years old at the time of his father's death.

During World War II, Richard Rhody served as a fighter pilot in the Pacific area, and was awarded the Distinguished Flying Cross and the Air Medal with Oak Leaf Cluster.

He received the B.A. degree from Wabash College in 1950, and then accepted

a traineeship in health physics at the Oak Ridge National Laboratory and the Department of Physics of Vanderbilt University. Later, he became a graduate student in physics at Vanderbilt and was awarded the M.S. in 1951 and the Ph.D. in 1954.

He joined the faculty of the State University of Iowa in July, 1954, as a member of the staff of the Radiation Research Laboratory of the College of Medicine. During his tenure, he collaborated in many research projects that utilized his understanding of radiation physics. He developed several radiation detectors which were valuable in such investigations as localizing brain tumors, estimating dose rates in certain local areas containing radioactive material, measuring one type



of radioactive isotope in the presence of others, and measuring fast neutrons of a cyclotron beam. He published several papers on fast neutron dosimetry, brain tumor localization and specialized radiation-detecting devices.

About a year before his death, a routine examination of his blood revealed an abnormal condition, and further examinations showed that he had leukemia. After due deliberation, his colleagues told him about it, and he responded in a most courageous manner. While under treatment, he worked between hospitalizations and finished several of his projects. He died on August 12,

1957, in Menominee, Michigan, while on a vacation trip with his wife and son.

Dr. Rhody was a member of the Radiation Research Society and a charter member of the Health Physics Society. He will be remembered as a radiation physicist of great promise who already was making worthy contributions to radiological physics, nuclear medicine and radiation biology. Those with whom he worked and lived remembered, in addition, his kindly manner, his droll wit and his courage. The passage of time has not dimmed their admiration for him or their feeling of great loss at his passing.

"Feedback," A Medical College, and Truth

NORMAN B. NELSON, M.D.

DEAN, S.U.I. COLLEGE OF MEDICINE

IF THE TITLE I have given my thoughts has intrigued you sufficiently to cause you to read what I shall say, it has accomplished its purpose.

One of the most important recent concepts in medicine is that of continuous "feedback." Without feedback of sensory stimuli, simple walking would be impossible. Every physiological process is controlled and balance is maintained by continuous feedback.

The principle of continuous feedback is just as important to society as to the human body. The return of honest information to those in positions of responsibility is essential for correct action. The human mind operates much like an I.B.M. machine. It is capable of fine judgment, discrimination and calculation. Just like an I.B.M. machine, however, its conclusions are no better than the facts that have been fed into it.

When Dr. Harold Diehl became dean of the Medical School of the University of Minnesota, Dr. "Will" Mayo, then one of the regents of the University, told him, "The way to be a dean is to ask as many people as possible for their opinions on a subject, think it over and then do what you think is right." He then added, "Afterwards, go back to those whose advice you did not take, and tell them you are sorry." The administration of the S.U.I. College of Medicine is interested in encouraging feedback—from its staff, from the doctors of the state and from the people of Iowa. Many mechanisms have been established to facilitate the process: the "open door" policy, the Dean's Advisory Committee, the Medical Council, the Clinical Committee and numerous other groups. The ISMS Committee on Medical Education and Hospitals has been a major feedback mechanism for the doctors of Iowa, although it is by no means the only one. Your president, the

members of your Board of Trustees and the members of the State Medical Society throughout Iowa have given us excellent constructive criticisms, suggestions and information. We not only appreciate their help, but need it. Further, it augments a feeling of responsibility for your College of Medicine.

Every action of the body is the composite result of many stimuli. At all times, certain stimuli are given preference over others. Similarly, it is impossible for a dean (or a medical society president) to satisfy or to follow completely the advice of everyone at all times. A stimulus from the brain may say, "Run," at the same instant that a stimulus from the foot, in response to a sharp object, says, "Stop!" Both stimuli are important. One physician may say that the College of Medicine should channel more of its energies into research; another, into teaching; another, into service. The final action will depend, as in the body in a moment of truth, on the relative significance of those stimuli. Every stimulus has some effect, even though that effect may not be immediately apparent.

It is possible to carry the analogy between man's physiology and society even further. Just as man has evolved physically over the centuries, so he has evolved socially. Just as physical man still has his weaknesses, man's society has imperfections. As physical man has mutations, society still has its aberrations.

To the same extent that we can characterize the ideal physical man, we can describe the ideal society. It is a commonly accepted fact that only a society based upon truth and justice, law and order, can bear the fruits of freedom of religion, freedom of speech, freedom from fear and freedom from want. Yet, these freedoms are still in

large part only dreams—prevented from materializing by man's greatest enemy, man himself.

Man alone has the privilege of knowing intellectually that he acquires rights only as he accepts responsibilities. Man knows that no freedom exists where there is special privilege. Yet man's vision is still so short that he seems incapable of giving up the immediate apparent or personal advantage for the greater long-term good, forgetting that he himself becomes, in time, a product of his own actions and a slave of his own past.

Only when man dedicates himself to truth, will he become free from the bonds of ignorance, prejudice and suspicion, with their accompanying fear, poverty and suffering.

Two thousand years ago, a great Teacher said, "Know the truth, and the truth shall make you free."

Truth, however, does not exist in a vacuum, or alone. It requires always a basis of reference, and a communication. Even such a simple concept as the meter (in measurement) was first defined as a fraction of the circumference of the earth (one ten-millionth part of the distance from the equator to the pole). With the realization that our measurements of the earth's circumference were inaccurate, an empirically-marked platinum iridium bar was substituted as the standard, and was placed for safe-keeping in the International Bureau of Weights and Measures at Sevres, France. Even that has to be further refined by stating the temperature of the bar.

But even more important than the frame of reference of truth is its communication. The burden of conveying a truth rests upon the individual who is attempting to explain his point. Just having

"told" someone something does not guarantee that he understands it, or that he appreciates its full significance. If I have made a statement which 1,000 people would say is true, but you have misunderstood me, I have conveyed a lie.

This brings us back to the concept of "feedback." Knowledge of the truth has no value unless it is communicated. The terms used must be unequivocal ones that the audience can understand, and most of all, the knowledge must be conveyed to those in society who are in position to profit from it. As educated, thoughtful, cultured citizens, we physicians have a real responsibility to supply society with such stimuli as we have in our power. A healthy society—government, medical society, medical school, etc.—must have this feedback.

YOUNG PEOPLE'S CRITICISMS OF IOWA

"Iowa isn't going backward," said a young S.U.I. medical school graduate now interning at a hospital in Eugene, Oregon. "It is rather a case of everyone else going forward while Iowa stands still."

The DES MOINES TRIBUNE regards that reply as typical of the responses it got in answer to the question "What don't you like about Iowa?" which it asked of 64 of the 1958 graduates of the state's four largest colleges. The newspaper said that most of the answers, like the one just quoted, were protests—protests against what one of the others called "Iowa's lackadaisical attitude" or what another called "Iowa's traditional reluctance to change." The interne just quoted volunteered, nevertheless, that he wants to return here to practice medicine.

The graduates—18 in medicine at S.U.I., 19 in engineering at I.S.C., 11 in law at Drake, and 16 in education at I.S.T.C.—were questioned to determine why some young Iowans leave the state and why others stay. Thirty of those questioned have left the state at least temporarily (10 physicians, 12 engineers, and 8 teachers), and 34 are still in Iowa (8 physicians, 7 engineers, 11 lawyers, and 8 teachers).

An S.U.I. medical graduate interning in Flint, Michigan, was quoted as saying: "Iowa needs to spend more money on its education—from the University on down. She will continue to lose good teachers until she starts to pay them a competitive wage." Others of those who replied listed the tardiness of Iowa's industrialization and its unfair representation in the General Assembly. The most frequently mentioned complaint of young physicians is the inadequacy of the state's roads.

One young doctor objected to what he regards as favoritism toward farmers in Iowa's tax structure, and he said he knows whereof he speaks, for he is a farmer's son. "There should be a removal of special tax privileges held by farmers in Iowa so that they would carry a more proportionate share of the tax load," he declared.



Norman B. Nelson, M.D., Dean

The State University of Iowa

Rehabilitation Center

The story of the State University of Iowa Rehabilitation Center begins with the poliomyelitis epidemic of 1952, when 778 victims of the disease were admitted to University Hospitals, surpassing the earlier record of 560 patients admitted in 1950.

At one time during 1952, 93 patients were crowded into space originally equipped for 63. Problems relative to nursing care and sanitary facilities became acute. Distance between beds sometimes was reduced to a space sufficient only for a person to walk. Fifteen cribs were housed at one time in a room where eight were considered practical for adequate care. In rooms designed for four persons, there often were nine or eleven children.

Corridors became jammed with equipment not being used because there was no storage space available and because the equipment had to be ready for use at a moment's notice. Twelve Red Cross nurses were sent to the Hospitals to help relieve the nursing shortage. Relatives of patients gave invaluable aid in caring for their own family members as well as other polio patients who had reached the post-contagious period.

In an effort to avoid a recurrence of the 1952 problems, funds were sought to establish a Polio-Rehabilitation Center in Children's Hospital in space which the Department of Pediatrics would vacate in a move from that building to the General Hospital.

Step by step, with funds appropriated by the Iowa Legislature, plans for the Center materialized. Then, as poliomyelitis dropped drastically in incidence, the Center devoted an increasing measure of its efforts and facilities to patients whose crippling conditions stemmed from ailments other than polio.

CENTER IS SPACIOUS AND WELL EQUIPPED

The main part of the Center occupies a major part of the ground floor level of the west wing in Children's Hospital, and several areas of the building's basement sections. Two large wards and a shorter one are used to care for most of the patients. There also are several isolation rooms and a number of rooms which accommodate several patients each. The Center has its own distribution kitchen for food which is prepared in the main hospital kitchens. Examining rooms and offices are located near the ward areas.

Physical therapy and occupational therapy divisions both have treatment areas and office space in the basement sections. The brace shop, which serves all of the University Hospitals, is located adjacent to the PT and OT areas.

Capacity of the Center is approximately 40 patients. No patients are admitted directly to the Center. Instead, they are referred to the unit by one of the clinical departments in the College of Medicine.

The unit today is a rehabilitation center in the broadest meaning of the term. The staff includes personnel trained to care for patients with virtually every kind of crippling disorder. Many of the patients are accident victims. A sizable percentage of them are post-surgical cases from various departments such as Neurology, Surgery and Orthopedics. Elderly diabetics and cerebral vascular accident victims also are included among the cases. An increasing number of arthritics are seen.

The breadth of treatment offered at the Center is reflected in part by the fact that every clinical department in the University's College of Medicine is involved in the care of the patients. Each patient continues to be the responsibility of the referring department.

For many of the patients, rehabilitation starts with learning to care for their functional needs—feeding themselves, brushing their teeth, combing their hair, bathing themselves, attending to toilet needs. Once they attain some degree of proficiency at these personal tasks, they receive training aimed at helping them to ambulate, and, in many cases of women patients, to care for certain housekeeping duties.

PARAMEDICAL PERSONNEL ARE IMPORTANT IN REHABILITATION WORK

University physicians and nurses are aided in the rehabilitation work by several groups of specially-trained professionals. For example, physical therapists, at the direction of doctors, help many of the patients to recover the use of weakened or paralyzed limbs. Most of the physical therapist's efforts are based upon therapeutic exercise which is prescribed according to each patient's specific problem. The therapist is aided by such equipment as a special, heated exercise pool with appropriate supporting apparatus for patients, by four whirl pools for hydrotherapy to the extremities, and by two Hubbard Tanks for full-body immersion. Facilities for hot pack treatment, for dry heat and for paraffin baths also are included in the Center's equipment. And the treatment gym has the usual array of walking bars, practice stairs and exercise bicycles.

While these devices receive daily use, they are not the only mechanical means employed by the therapists in applying their exercise technics

to weakened muscles. Much of the equipment used by the Center is "tailor made" for its use—not because the Center has been unable to obtain the commercially manufactured devices, but because the therapists and the doctors often feel that they can come closer to obtaining precisely the equipment needed for a specific patient if they have it built in University shops.

The resulting product may be a box frame with weights and pulleys designed especially for a particular problem. Or it may be nothing more than an old-fashioned rocking chair with a special foot stop for the patient to push against with an involved leg.

In addition to the service performed directly for the patient, instruction for physical therapy students also is provided at the Center. Approximately 300 physical therapists have received their training at the Center since 1943. About one-half of the registered physical therapists in the state are graduates of the SUI course.

Occupational therapists also play a major role in the patient's fight to recover some degree of physical independence. They are especially instrumental in helping the patient learn to care for his own functional needs. The therapists also

engage the patients in crafts which require physical movements beneficial to the patients' treatment.

Probably one of the best known activities of the "OT" program at SUI takes place in the rehabilitation kitchen for women patients. Many of the women who receive treatment at the Center are housewives and mothers of young children. The main concern of these women usually is the welfare of their families. To return to their responsibilities at home is their greatest wish.

The occupational therapists have furnished one room in their area with a stove, refrigerator, sink, table, cabinets and other kitchen equipment which most of the women have in their own homes. In this laboratory kitchen, the patients are taught to make the most of their physical abilities. For example, a mirror is adjusted above the stove so that a wheel-chair patient can see into a pan on top of the stove despite the patient's being seated at a low level. Straps are attached to the sink front to enable some of the patients to support themselves while standing up before the sink. The aim is to help the patient adjust to standard equipment, with slight modifications, rather than building or buying special equipment.

The occupational therapists also conduct, for



Terry Jones (left), registered physical therapist, adjusts supporting apparatus for patient in heated exercise pool at the S.U.I. Rehabilitation Center.

both men and women, an "Activities of Daily Living" program in which patients are taught to dress themselves, raise and lower windows, turn room lights off and on, feed themselves, and perform numerous other routine acts unaided. All of the "ADL" and kitchen training is directed at teaching the women to be useful to themselves and their families when they go home.

The occupational therapists at SUI also have a formal training program.

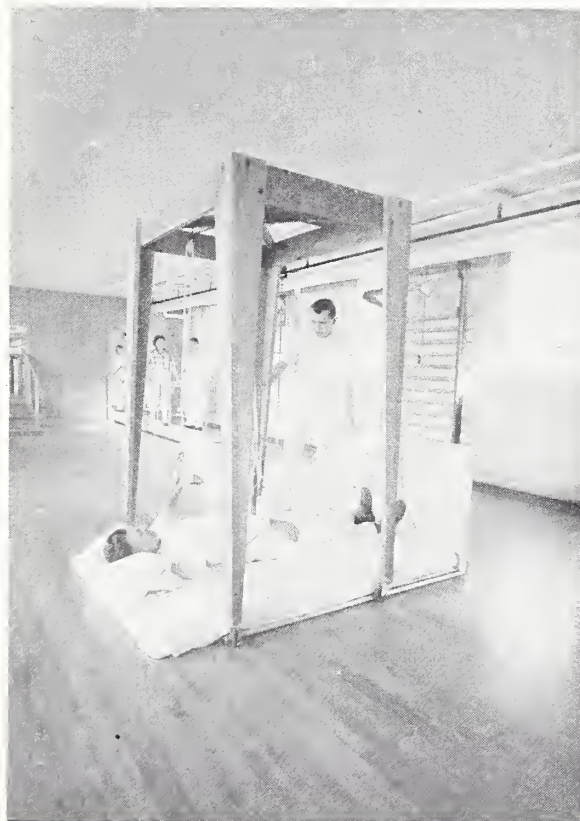
Physical and occupational therapy are not the only allies which the doctors have in their treatment of the rehabilitation patients. Perkins School, a school which operates within the hospitals for the benefit of hospitalized youngsters who might otherwise miss lengthy periods of instruction, is available for the rehabilitation patients. Speech therapists aid the physicians in speech difficulties which accompany some of the disorders. The State Division of Vocational Rehabilitation has a branch office in Children's Hospital and works with patients whose cases fall within the authority and responsibility of the Division. If needed, social service workers on the hospital staff aid in the placement and home care of patients after they leave the Center. University psychologists help in the development of programs which avoid many of the emotional problems that often come with

the crippling conditions. And the University brace shop designs appropriate devices which the physicians prescribe to help the patients support themselves as they walk or move about.

The patients all eat together unless they are ill. In the evenings, those who wish to do so gather in the Center's recreation room. One night a week, they have a party or game night. Sometimes at these events, they roast frankfurters or participate in some similar recreational activity. Many of them are taken to basketball games and other athletic contests at the University.

One of the major features of the Rehabilitation Center is its flexibility. During its first year, most of its facilities were devoted to polio patients during seasons when the disease was more prevalent. However, as the patients were discharged after the seasons were over, rehabilitation patients from many of the clinical departments were admitted, the Hospitals thus maintaining a program of service year-round in the unit. Also, when an influenza outbreak occurred among SUI students two years ago, the Center was converted into an emergency infirmary where up to 30 new flu cases daily were sent for hospitalization.

Administrative director of the Center is Dr. Carroll B. Larson, professor and head of orthopedic surgery at SUI. Dr. W. D. Paul, professor of medicine, is medical director of the unit. Operational policies are established by an advisory committee appointed from the medical faculty by Dr. Norman B. Nelson, dean of the College of Medicine.



James Dahm, registered physical therapist, instructs patient in use of exercise device built specially in University shops.



Wheel-chair patient in the S.U.I. Occupational Therapy Division shows how a mirror helps her to see contents of pans on the surface of a stove.



Scientific Articles

The Role of Medicine in Rehabilitation

CARROLL B. LARSON, M.D.

IOWA CITY

DOCTORS AND hospitals have a large stake in the total field of rehabilitation, if by rehabilitation we mean the restoration of the handicapped individual to the maximum of physical efficiency in the shortest possible time. In the case of a simple fracture, it would appear that good medical treatment and rehabilitation are synonymous. In the case of a fractured neck with paraplegia, on the other hand, good medical care constitutes only the beginning of a period of rehabilitation. A much broader definition is necessary, and the medical aspects constitute only a portion of total rehabilitation. As we know it today, rehabilitation envisions a total effort toward the restoration of physically handicapped persons to useful lives, and the process includes surgical correction, functional restoration through exercise, special education, vocational training, and finally, employment. A team composed of doctors, nurses, physical and occupational therapists, social agencies, educators, vocational directors and employment agencies combine their efforts to meet this responsibility.

Handicapped persons in every community, large and small, look to doctors for help with their problems, and it is not enough for the doctors to give them medical advice alone. It is the responsibility of every practicing physician to be aware of the rehabilitation potentials that are available, and to guide the handicapped person through each phase of the total program of restoration. Indeed, the physician is ideally suited to act as captain of that team, and if he fails to accept that post, he betrays his community. It is his further responsibility to cooperate fully with all groups and agencies having the same goal, acting at all times as their advisor if not as an actual participant in the work. We as physicians may say, and rightfully, that our training has been

directed toward the care of those afflicted with acute or chronic illness, and that any responsibility beyond medical care belongs to the community. This may be true, but by the very nature of our knowledge of the medical limitations and of our ability to evaluate disabilities and arrive at prognoses, are we not in the best position to act as captain of the community team, and would we not be shirking our duty if we refused?

Whether or not doctors approve, it is a fact that rehabilitation in various forms is being publicized from all sides. The Division of Vocational Rehabilitation in Washington, under the Department of Health, Education and Welfare, has large federal appropriations to be spent in the field of training for the handicapped. Most states have divisions of vocational rehabilitation and training, receiving state appropriations and matching federal moneys. In our own state, counselors are available from the central office in Des Moines, to test, advise and arrange for the training of handicapped persons, and they are ready and willing to cooperate with doctors on a consulting referral basis. Insurance companies, labor unions, local and national foundation such as the Society for Crippled Children and Adults and the National Foundation are all actively engaged in promoting rehabilitation. The President of the United States has appointed a special committee on "hiring the handicapped," and has set aside one week of the year for emphasizing the importance of providing job opportunities to such people. Hospitals throughout the state are becoming increasingly interested in rehabilitation, and some of them are setting up small rehabilitation services. Thus, it can readily be seen that the demand for rehabilitation in one form or another is likely to increase rapidly in the future.

Dr. Larson is head of rehabilitation at the S.U.I. Hospitals.

THE PRESENT STATUS OF REHABILITATION WORK IN IOWA

What are the rehabilitation problems that confront us individually, or collectively through the State Medical Society?

1. Is the state ready to provide comprehensive rehabilitation as a service to all its handicapped persons? To answer this question, it is necessary that we survey the facilities that are now available in the state, and to a certain extent this has been done. There are perhaps a half dozen centers operating units which are called rehabilitation centers. When examined objectively, however, there is not a single center existing in Iowa that can provide surgical correction, physical restoration, vocational screening, prevocational training, vocational training and job placement. Each of the existing centers functions in one of the above named areas, usually that of physical restoration, and less than half of them are provided with medical direction except on a referral basis. Each center operates on a unique organizational basis and leaves a great deal to be desired as regards providing a continuing, follow-through program from physical restoration to job placement. Thus, even though each center has proper objectives and is trying to fill a need, it is obvious that a better coordinated system and many more centers are necessary before we can provide comprehensive rehabilitation.

2. What is the cost of rehabilitation? No realistic figures are available on which to base an answer to this question, but certain knowledge is available. In the first place, hospital beds must be built and set apart to care for one large segment of the handicapped. These, at the present time, are woefully lacking. Those in existence could not begin to take care of the number of persons who need inpatient rehabilitation. In addition to beds, the center must provide facilities in which the occupational and physical therapists can carry out the physical restoration. These require capital expenditures as well as a fixed monthly payroll, not only for the therapists but also for ancillary help such as is needed in any general hospital. Nursing care, social service and vocational counseling should all be parts of each center, as well as medical consultants in many areas. Moneys are needed for braces, artificial limbs and various specially designed gadgets to help the handicapped to perform daily functions. One can see that the cost problem goes beyond that of just setting up a gymnasium and employing one or two therapists. Hence, rehabilitation becomes a costly venture on an inpatient basis. An outpatient center requires the same equipment, space and personnel, but does not require hospital beds.

The cost of continued rehabilitation beyond the physical restoration center comes very high. Here, the handicapped individual needs a considerable amount of testing to determine his suitability for vocational training, and then the vocational training itself must be provided, and this in many in-

stances includes schooling and special housing, and transportation during schooling. This area is rather well organized and is operating through the efforts of the Division of Vocational Rehabilitation.

3. Who can be rehabilitated? Medical information is woefully lacking in this particular. The Division of Vocational Rehabilitation has some accumulated experiences that partially answer the question, but there is great need to explore this area and to evaluate the statistics critically. This can be done only through controlled studies that will rule out those handicapped persons who have accomplished or would be capable of self-rehabilitation, as opposed to those who are now excluded from rehabilitation facilities on the grounds that they are not rehabilitable. It seems clear that documentary evidence must be collected and must be approved by all members of the rehabilitation team before a definite answer is given to the question, "Who can be rehabilitated?"

STEPS THAT WE SHOULD BEGIN TAKING

The altruistic goals of comprehensive rehabilitation must stand out clearly for all concerned if we are to expect the momentum we build today to survive into the future. We must ponder the questions and build our state organizations on solid foundations, rather than ride the crest of public enthusiasm in the house that Jack built. To build a firm foundation, we must first meet the crying need for a common language that all of the interested groups can use, and for an understanding among the organizations and agencies that are now working in the field of rehabilitation. These objectives can be attained through conferences where the general purpose is agreed upon and a free interchange of ideas takes place.

The need for rehabilitation can be explored from the points of view of doctors, vocational counselors, insurance companies, welfare agencies, industrial commissioners, farm groups and representatives from the various foundations. Organizational patterns can be set up to provide the specific types of rehabilitation needed in various areas, and those patterns will show the need for cooperation and dovetailing of all agencies and centers to provide, in the end, a continuity of care for the handicapped, leading to job-placements and the preservation of their self-respect. Such planning might point up the need for more and better leadership, indicate where presently existing overlaps and duplications of effort could be eliminated, and generate a more active interest among employers in the hiring of handicapped individuals.

For that segment of unfortunates who cannot be employed, the planning could lead to the establishment of sheltered workshops that Iowa does not now have. Iowa has an opportunity and a real challenge, because of its size and homogeneity of population, to become a model in the establishment of a rehabilitation system that works for all.

The Medical Rehabilitation of Rheumatoid Arthritis

W. D. PAUL, M.D.

IOWA CITY

PAIN IN OR ABOUT one or more joints may be caused by any one of a number of conditions ranging from arthritis to neoplasms or even fractures. Before any form of treatment can be instituted, it is necessary, if possible, to determine accurately whether the disability or pain is due to arthritis and to diagnose the type of joint disease.¹

The treatment of any form of arthritis consists of an attempt to eliminate or alleviate the disability and to maintain a maximum degree of function. These aims can be accomplished through the use of rehabilitation medicine—i.e., all types of therapy available to the physician. Rusk says, "The first objective of rehabilitation medicine is to eliminate the physical disability, if that is possible; the second, to reduce or alleviate the disability to the greatest extent possible; and the third, to retrain the person with a residual physical disability 'to live and to work within the limits of the disability but to the hilt of his capabilities.'"² The commonest arthritic disorders are those of the degenerative and rheumatoid types and gout. The treatment of rheumatoid arthritis includes the use of drugs, physical modalities, appliances, psychotherapy and all of the other facets of rehabilitation medicine.

It is rheumatoid arthritis which is to be discussed in this paper.

STAGES OF THE DISEASE AND AIMS OF THERAPY

Rheumatoid arthritis is a generalized disease in which the major histologic changes occur in synovia, cartilage and other structures in and about the joints. Evidence of it can be seen in the serum protein changes, negative calcium metabolism, abnormal glucose tolerance, muscle atrophy, peripheral neuritis, etc., even before specific tests for the disease become positive, and long before abnormal changes can be seen on a roentgenogram.^{3, 4} To simplify treatment, the disease can be divided into four stages: (1) the acute stage; (2) the stage of exacerbations and remissions; (3) the early stage of deformity; and (4) the ankylosing stage. It may be hoped that if the proper treatment is prescribed and carried out, fewer patients will progress to stage 4, and bony ankylosis and severe deformities can be avoided. Since there are no specific remedies that will cure or arrest the disease, treatment is directed toward (1) suppression of

acute flares; (2) maintenance of function; (3) reduction of pain; (4) prevention of marked muscle atrophy and shortening; and (5) the possibility of continuing the activities of daily living.

At present, when the average patient is first seen by the physician, he is usually given one of the many steroids. These drugs suppress pain, affording the patient a sense of security from the disease, or at least the confidence that it will not cripple him. But then, as the patient relies on the drug to cure him, he discovers that larger and larger doses are required to stop the pain, and also that the course of the disease remains unaltered. At that point, one of the insidious side effects of the corticoids becomes apparent. The patient complains of severe fatigue and pain in the musculature of the extremities. This syndrome has been called steroid pseudo-rheumatism.⁵ If, as is commonly the case, the dose of steroid is increased, there exists a possibility of substituting a severe-to-fatal disease (hypercortisonism) for a chronic, self-limited, non-fatal disease (arthritis).⁶

THE PATIENT MUST BE REASSURED

The first step in the treatment of rheumatoid arthritis is to acquaint the patient with a few basic facts relative to the disease. The fear of being bed-ridden or confined to a wheel chair can readily be dispelled by telling him that about 60 per cent of the cases burn themselves out; that 30 per cent have exacerbations and remissions, with slight to moderate deformities; and that only 10 per cent may advance to severe deformities or crippling. Even for patients in the latter group, it may be possible to maintain ambulation and restore function through the use of appliances and reconstructive surgery.

Patients with rheumatoid arthritis present themselves to physicians for relief of pain, the most frequent and distressing symptom of this disease. It is this symptom that causes arthritics to try all nostrums in their search for relief, as well as to visit quacks of all types. They must be told that pain occurs during an acute flare-up of arthritis, but that after the disease has become established, the pain may result from the ravages of the disease, even though the process is burned out. Once they understand this fact, they are less anxious than they have been to resort to steroids or other miracle drugs. It must be impressed upon them that they must learn to live *with* their disease,

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rather than for it. The patient who can tolerate some pain rarely becomes confined to a wheel chair or becomes bedridden.

SALICYLATES REMAIN THE DRUG OF CHOICE

The basis of all treatment for rheumatoid arthritis is the maintenance of mobility through adequate motion, and relief of pain by means of either simple analgesics or physical therapy of the type that can be carried out at home. Despite all of the newer so-called miracle drugs, salicylates still remain the most effective anti-rheumatic and analgesic agents in the treatment of arthritis. In the acute stage of the disease, when there are symptoms such as swelling, redness, pain and heat in a joint, salicylates are given orally in the form of acetylsalicylic acid. The patient is kept at bedrest, and the painful joint is immobilized in a position of comfort. This is best accomplished through the use of a Schantz wrap. Salicylates in the form of a methyl salicylate ointment is rubbed on the skin over and near the joint, absorbent cotton is then loosely wrapped around the joint, and a three-inch flannel bandage is firmly wrapped around the cotton. This type of dressing will prevent motion and relieve most of the pain. If the patient has a fever, the non-involved joints are carried passively through a normal range of motion, and actively if there are no constitutional symptoms. These exercises are carried out at least twice a day. The dressing is removed once a day, and the involved joint is gently flexed and extended passively up to and then slightly beyond the point of pain. After the acute symptoms subside, the patient is allowed to sit up and to exercise the non-involved joints actively.

The involved areas can be treated with hot packs, heat lamps or heating pads, and then carried through a range of motion up to and then slightly beyond the point of pain. The patient can massage the painful areas with methyl salicylate ointment, a procedure that helps carry out exercises for the upper extremities, keeps him occupied part of the time and helps relieve pain.

As the acute symptoms subside, graded exercises are initiated, including walking and mild calisthenics. Ten grains of acetylsalicylic acid in the form of Bufferin should be taken on arising to overcome stiffness, and the dose should usually be repeated before each physical therapy procedure to prevent excessive pain. Two tablets of Bufferin are also taken at bedtime to reduce pain, thus allowing the individual to fall asleep.

Most of the patients seeking relief of symptoms are usually in the stage of exacerbations and remission, with only slight deformities (stages 2 and 3). In that group, the best results are obtained from a combination of salicylates and steroids in addition to physical therapy. Bufferin is given in varying doses until maximum results have been obtained. If the patients still have synovial swell-

ing, marked elevation of erythrocyte sedimentation rate, slight elevation of temperature, lymphadenopathy and other signs of a true flare, then steroids can be added to the salicylates.

It is best to give such patients small, frequent doses of the corticoids, rather than two or three large doses. For example, one can give 1 mg. of the metacortisones every three hours around the clock (a total of 8 mg.), rather than 5 mg. tablets three times a day. We always instruct the patient to break the tablets in half, or if a smaller dose is prescribed, to cut the tablets into quarters with a razor blade. When the newer drugs are prescribed, they are given in 0.25 mg. (Dexamethasone) or 1 mg. (Triamcinalone) doses. On the basis of our accumulated experience with these drugs, we strongly recommend that smaller doses be prescribed.

It is important for the physician to bear in mind that the increased potency of the newer steroids involves added responsibility for the patient. A simple comparison between the recommended doses of cortisone and Dexamethasone should adequately illustrate this point. An 0.5 mg. tablet of Dexamethasone is equivalent to a 25 mg. tablet of cortisone.

Bufferin can be given with each dose of steroid, or in between doses as needed. The dose of salicylate usually is a good indication of the effectiveness of the steroid. As soon as maximum results have been obtained, one dose of the steroid is eliminated at a time. An attempt is always made to maintain the patient on the smallest possible dose of steroid, increasing and decreasing the salicylates to meet the stress of daily living.

REST AND EXERCISE ARE IMPORTANT

While the patients are receiving anti-rheumatic drugs, they are at first kept at bed rest and given regulated exercise. As the acute phase subsides, the period of exercise is increased until the patient is allowed up most of the day. Even then, definite periods of bed rest should be prescribed. As soon as possible—even when the patient is at bed rest—he is taught how best to carry out the activities of daily living. These consist of washing the face, brushing the teeth, combing the hair, buttoning the pajama coat, cutting their food and feeding themselves, etc. Often, hand deformities necessitate enlarging the tooth brush handle or the grip on a rat-tail comb, by wrapping it in foam rubber and fastening the rubber with adhesive tape. Oval grips can be made of plaster of paris or thin strips of aluminum, and to these one can affix pencils, pens, knives, forks or spoons. All appliances used to assist or to reteach the activities of daily living can be bought at moderate prices.⁷

Before a joint is exercised, heat or some other modality can be used to relax the muscles and prevent some of the pain. One of the simplest methods of transferring heat to the hands is the paraffin

bath. All that is needed is a double boiler (rice boiler) and a supply of paraffin, both of which can be found in the average home. Before the hands are immersed in the warm paraffin, they are coated with lanolin or coconut butter. This allows the paraffin to be peeled off the hands without pulling the small hairs.

Hot packs are useful over shoulders or knees, for the woolen material that is used for this purpose can be moulded about the irregular surfaces. Heat lamps or electric pads can also be used, but if they are not watched carefully, they may cause blistering or minor burns. After heat has been applied for about 20 minutes, the affected part is then carried through a range of motion. To strengthen weak muscles, the part is moved against resistance. This can be accomplished with a small pulley and a length of rope. A weight is tied to one end of the rope and the other end is tied lightly around the ankle or held in the hand. With this simple equipment, every type of motion can be carried out, such as flexion, extension, adduction, abduction, etc. At first, a weight of only 0.5 to 1.0 lbs. should be used, and as improvement is noted, larger and larger ones can be employed, depending upon the patient's age, sex and severity of disease.

Exercises carried out in the home or in the place of the patient's employment are more effective than those performed in a clinic or hospital. A young woman can obtain better exercise of the fingers or wrists by using a typewriter or operating one of the many electric bookkeeping machines than by manipulating a rope, pulley and weight gadget such as has been described. A housewife can exercise her fingers, wrists, elbows and other joints adequately by peeling potatoes, grating carrots, dusting the furniture, rocking in a chair or going through others of her accustomed motions. Heat can be obtained in a bathtub of warm water, and while the patient sits immersed, a part of the effect of gravity is removed from his limbs, and he can perform exercises with minimal pain.

The arthritic farmer can warm his hands in tepid water and then milk the cows to maintain strength and dexterity in his fingers. Shoulder exercises can be graded by moving a pump handle up and down at a definite rhythm and speed. Knee and hip exercises can be done by moving the pedal of a grindstone or by working in the garden. Thus, the home or place of employment provides ideal areas in which to carry out numerous types of exercises, all of which will maintain strength and mobility, and prevent marked atrophy and ankylosis.

FLEXION CONTRACTURES MUST BE PREVENTED

Deformities of arthritic joints should be prevented, if at all possible. To prevent pain, the patient tends to keep the involved joints in partial flexion, especially at night. This is usually the first step in the inevitable flexion contracture seen too often in these patients. They should sleep on a bed

that doesn't sag, and should keep the joints in full extension. Pillows should never be placed under the knees. A small pillow should be used to prevent flexion contractures of the neck. Night splints made of plaster of paris, aluminum or plastics can be applied to prevent ulnar deviation and marked flexion contracture of the wrist. Placing the hands beneath the head on first going to bed will maintain motion of the shoulders. Chewing gum often prevents partial ankylosis of the temporomandibular joint. Pillows, sand bags and footboards are used to prevent increasing flexion of joints of the lower extremities. Patients should be warned against using sloppy bedroom slippers, particularly when first starting to walk. Callouses should be trimmed properly, as should corns, and shoes should be well fitted. If necessary, the shoes should be fitted with metatarsal bars, heel pads or wedges, and soft felt pads under the instep.

SPECIAL DIETS OR CLIMATES DO NO GOOD

Much has been written for and against certain types of diet for arthritic patients. The only diet that is useful is one that provides the individual with the necessary amounts of proteins, carbohydrates, fats, minerals and vitamins, and that contains enough calories to prevent a gain in weight. The use of colonic irrigation and the giving of continuous doses of laxatives should be condemned. The average arthritic has little or no constipation, and the use of irrigations and laxatives can soon lead to an irritable bowel and a very irritable patient. Home exercisers, special bicycles, bar bells, etc. should not be used, for they intensify the joint damage.

Climate is another modality offered patients as a cure all. Many an individual chases the pot of gold at the end of the rainbow, only to find that home is the best environment for his illness. States blessed with sunny climates have just as many arthritics as do our midwestern ones.

SURGERY CAN AMELIORATE DEFORMITIES

Finally, we come to the ankylosing stage (Stage 4). At present, much can be done for these cripples through surgical rehabilitation. Before any such procedures are attempted, it is necessary to determine whether the patient has true dense-fibrous or bony ankylosis, or whether he is bedridden because no attempt has been made to ambulate him. Again, the individual must be shown and convinced that the pain is not caused by the acuteness of the disease, but by the damages resulting from it. Some of these people can be ambulated through the use of psychotherapy, various types of physical therapy, braces and walkers. Surgical procedures may then help salvage more of these individuals. There are a number of surgical procedures that can be carried out early in the disease to prevent further deformities. Recurring fluid in the knee joint, despite frequent aspirations and instillation

of hydrocortisone, can be slowed down or stopped by synovectomy. Surgery on the hand may prevent excessive ulnar deviation and maintain function of the fingers.

SUMMARY

The most effective method of treating the arthritic patient starts with the doctor's giving him a thorough explanation of the natural history of the disease. This entails psychotherapy to dispel the fear of severe crippling and adequate attention to achieve reassurance.

The aim of all treatment is to maintain mobility and function, so as to enable the patient to remain self-sufficient. Pain is the most common and most distressing symptom of the disease.

The drug of choice is acetylsalicylic acid. When necessary, corticoids can be a valuable supplement, but they should be used with caution.

In conjunction with mobility, periods of rest must be prescribed. Various types of heat will help maintain function and reduce pain. Exercises that can be carried out in the home or place of employ-

ment will prevent marked deformities, marked ankylosis and some of the muscle atrophy, and will help strengthen the muscles.

A few of the marked deformities of the hands and feet can be prevented by early surgical procedures. In cases of crippling deformities, surgical rehabilitation may help restore some functions.

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Rehabilitation in Neurology

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THE PRACTICE of neurology includes a large number of patients who have chronic disease. It is not unusual in neurologic practice to treat patients who are either partially or completely incapacitated by an illness which lasts for many years. The complete care of the patient incorporates not only diagnostic review and immediate management, but also implies continued care over many years with careful attention to rehabilitative measures.

In the United States there are about 1,250,000 hemiplegic individuals, 300,000 have cerebral palsy, a similar number suffer from the residuals of poliomyelitis, between 100,000 and 200,000 have multiple sclerosis, and between 500,000 and 1,500,000 have epilepsy.¹ In addition, there are many thousands with disorders of hearing or vision, mental defects, and the residuals of war wounds involving the central nervous system. The magnitude of the problem is indicated by the fact that neurologic patients constitute 25 to 50 per cent of the bed population in hospital rehabilitation centers or homes involved in rehabilitation work.² It has been estimated that there are 5.3 million disabled in the United States, and that this number represents about 3.3 per cent of the total population.³

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OBJECTIVES OF TREATMENT

Within recent years, an optimistic method of appraisal of the neurologically ill patient has asserted itself. This attitude has been termed by some the "concept of assets." By this is meant that the patient's disabilities are no longer the only considerations. Now, the patient's intact faculties are reviewed as well. For example, when a patient presents with a right hemiplegia and dysphasia, these deficits are not the only factors that the diagnostician considers. The fact that he has normal upper and lower left extremities and that there is some method of communication open to him are stressed. From a rehabilitative point of view, it is far more important that the patient's intact functions should be evaluated and emphasized when he is reviewed at the bedside, than that all of the physician's attention should be devoted to the diseased parts.

The objectives of treatment in a rehabilitation program are threefold: (1) self-care; (2) ambulation; and (3) social integration and vocational adaptation. Few other types of disease produce a greater loss of the ability to care for oneself than does neurologic illness. Frequently, in neurologic disease, obvious deficits such as loss of vision, inability to move or control limbs, and loss of control over the bladder and bowels are present. These disabilities are the cause of discouragement and despair to the patient and his family alike.

THE TRAINING PROGRAM

Training the patient toward the goal of self-care should start almost as soon as the patient can understand his physician and when the initial period of the illness is over. The more time put into this program in the early phases of illness, the more time will the patient devote to the other components of a program devised to return him to some measure of useful activity. The intense satisfaction a patient achieves on finding himself trained and motivated in self-care will reflect itself in the success of the program at a later stage.

It must be remembered that the entire program—the exercises, the employment of drugs where possible and the use of supportive measures—must always be aimed at helping the patient to take care of himself, to walk and to rejoin his community. The concept of early ambulation may well be identified as one of the significant advances in medicine during this century. This goal of walking and the adequate use of mechanical aids must be continued in the home. The patient's family should be instructed in his use of walking exercises and in the employment of special devices such as walkers on rollers before he leaves the hospital.

Early ambulation is not an impossible goal. Often, the patient will make an independent early effort, and this should be encouraged. Neither the patient nor any member of the rehabilitation team should overlook an opportunity for even the slightest advance either in walking or sitting in a wheel chair. It should be emphasized from the beginning that prolonged bed rest is as much an enemy as is the patient's particular disease. With mobility, moreover, self-respect and a feeling of independence come automatically.

One must recognize that the job is not done once the patient has passed the initial phase of his illness. In many respects, the program has only commenced. It is no great satisfaction to the patient, his family or his physician to have the patient discharged from the hospital only partially recovered. If this occurs, he may be abandoned. Under such circumstances, the family surrenders its sense of responsibility early, and then either resigns itself to the thankless role of custodial care or eventually requests that some agency take care of the patient, long after the inception of irreversible states such as contractures.

A careful plan of vocational rehabilitation should be arranged while the patient is still in the hospital, if there is any hope of his further improvement. This implies that the social service worker must have a number of interviews with the patient, his family and the members of the rehabilitation team. The physician, the physical and occupational therapists and the medical psychologist will have an opportunity to present their opinions of the patient's capabilities and assets. If possible, the patient should be interviewed by a

vocational rehabilitation worker while he is still in the hospital. The social reintegration of the patient is partly accomplished in the sympathetic setting of the hospital, and the retraining process continues for both the patient and his family after he has been returned to his home.

THE PHYSICIAN'S PLACE IN THE REHABILITATION TEAM

Reference has been made, in the foregoing paragraphs, to the rehabilitation team. The designation for this group was carefully chosen, and is not to be regarded as a catch phrase. Everyone who is assigned to help in the patient's full recovery should consider himself an integral member of this unit, the aim of which is the restoration of the patient and his return as a useful member of the community. The physician should look upon himself as the coordinator of the group. He is responsible for the medical and general care of the patient. He is responsible for the auxiliary services, determining when they are to be used and to what extent. The nursing staff, the physical and occupational therapists, the social worker, the medical psychologist, the speech therapist and the vocational guidance worker participate fully in the work of the rehabilitation team.

The types of exercises available are many and can be classified into several major groups. (1) Passive exercises, in which the involved extremity is carried through its full range of movement, are an important step in the initial stages of rehabilitation. (2) Active assistive exercises are continued until the patient is able to develop sufficient strength and endurance to carry his extremity through a range of motion unassisted. (3) Active exercises are next employed until ambulation can be substituted for them. (4) Resistive exercises have as their purpose the increasing of muscle strength and substance. (5) Coordination exercises are particularly useful in difficult cases in which ataxia predominates.

PROBLEM OF THE PATIENT AND THE PHYSICIAN

There are certain common and important problems of patient and physician. Muscle weakness is a frequent characteristic of neurologic illness. From the beginning of the illness, range-of-motion exercises should be carried out through all involved joints at least once or twice daily.

The prevention of contractures is of great importance, and active muscle exercises must be started as soon as possible. The best results are obtained from maximal-effort exercises. In spasticity, the primary aim is to keep the joints mobile and the extremities reasonably functional. Local heat, massage and electrical stimulation, combined with early ambulation, are usually successful. Orthopedic appliances are needed at times to assist the patient toward ambulation.

Rigidity, such as is seen in Parkinson's disease, is best treated by means of a general exercise pro-

gram combined with the use of anti-Parkinsonian drugs. Every effort should be made to discourage inactivity and invalidism. The patient should be encouraged to carry out his usual social and business activities to the best of his ability.

The best method of treating contractures is to prevent their occurrence. Appropriate positioning and passive movement of the various muscle groups ordinarily provide good protection against the development of contractures. But once the complication has occurred, renewed effort must be made in the use of passive motion, active exercises and appropriate splints.

Ataxic gait is in itself a great challenge to rehabilitative measures. Special foot-placing exercises are helpful, but remedial exercises are less likely to benefit ataxic patients than those with other sorts of neurologic disabilities. As in spasticity and rigidity, stability of the patient's emotional status assists in improving his degree of coordination.

Though the success of a rehabilitative program will depend to a great extent on the patient's motivation, his assets and the interest exhibited in him by the members of the rehabilitative team, certain drugs may be helpful. Drugs such as Flexin, Tolserol and Robaxin are often used, periodically, as muscle relaxants. Antispasmodics such as Artane, Pagitane and Kemadrin are useful in Parkinsonism. Patients with anxiety or with depressive episodes can be treated with sedatives or with tranquilizing agents such as Miltown, Thorazine or Sparine.

THE GREATEST CHALLENGES IN NEUROLOGIC REHABILITATION

In our experiences the illnesses that present the maximum challenges in rehabilitation work on a neurologic service are hemiplegia, cerebrovascular disease, head injuries and their late sequelae, paraplegia, multiple sclerosis and Parkinson's disease.

Bailey and Korengold have remarked, "Rehabilitation of the hemiplegic patient provides one of the most rewarding chapters in modern medical history. Prior to the more aggressive approach developed in the past 10 to 15 years, these patients were relegated to a bedridden existence in their homes or to the back beds of convalescent homes or medical wards. With a more dynamic approach using modern training opportunities as well as strong motivation, nearly 90 per cent of all hemiplegic patients can be taught to ambulate and handle their self-care needs. Nearly one third of that percentage can be expected to return to useful employment."⁴

As soon as the acute phase of the patient's illness is over, plans should be made to rehabilitate him. Careful attention must be given to the care of his skin. Frequent changes of position in bed are necessary. Attention to nutrition and the em-

ployment of an air mattress assist in preventing bed sores. Foot boards are used to prevent foot drop. The patient's bed is equipped with an overhead trapeze-like grip bar, and he is encouraged to use it efficiently. The physical and occupational therapists will assist him in developing methods of self-care. The urologist is often consulted for advice in the care of the bladder. Indwelling catheters and at times suprapubic cystotomy are necessary. The patient is encouraged to sit up, and then to use a bedside chair as well as a bedside commode. The goal is early ambulation, and in achieving it the nursing staff can be of great help. Parallel bars and walkers are used. At times, a Klenzak foot-drop brace is helpful. The head-injury patients are treated in a similar fashion, depending upon their deficits and assets.

The paraplegic patient presents special problems of skin and bladder care. "As a general rule the higher the lesion, the more difficult the problem," Bailey and Korengold say. "It has been adequately demonstrated, even with transection at thoracic 2, that ambulation is possible with the aid of crutches and long leg braces with pelvic supports."⁵ Motivation and morale are important problems. Urological consultation is always necessary. The paraplegic must learn to walk by using his arms. This requires special training and is developed by means of strenuous mat exercises. A wheel-chair existence is the goal in low cervical lesions. Recent work along these lines has revealed that patients are capable of conducting almost normal lives in this manner.

The multiple-sclerosis patient presents a rather unique problem in rehabilitative work, for he has fluctuating disabilities and remissions. Thus, a program in rehabilitation started a year ago may require revision because of further progression of the illness.

CONCLUSIONS

1. The concept of assessing the patient's assets has been stressed in this discussion.
2. It is important to keep in mind that rehabilitation is essentially a team effort.
3. Each program must be tailored to the individual patient, and should be continuously reviewed.
4. The goals of rehabilitation are self-care, ambulation and reintegration into community life.

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Rehabilitation of Some Visually Handicapped Patients

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THE REHABILITATION of a patient with poor vision is the most gratifying experience in the professional life of an ophthalmologist. Fortunately, the vast majority of patients coming into our office and clinic can be helped a great deal as far as their vision is concerned.

Many patients can be helped by the prescription of correct glasses to neutralize their refractive errors. This is especially true of the children and young patients who are myopic and who would be greatly incapacitated without the proper correction. On the other hand, we know that most of our patients past 45 years of age need corrective lenses in order to read and write, and that without such glasses any type of near-work would be impossible for them.

But beyond these patients who can be rehabilitated through the correction of a refractive error, we see many others who need more extensive therapy if they are to regain their vision.

REHABILITATION THROUGH TRAINING

An important step in the rehabilitation of children with strabismus is the training of an amblyopic eye. This type of poor vision occurs in the deviating eye because of disuse. In order to restore vision in such a practically blind eye, the child's good eye has to be covered for several weeks, and the poor eye has to be actively stimulated for a certain period of time. In this way, most of these children are enabled to grow up with two good eyes.

CATARACT SURGERY

In other patients, an operation may be necessary to restore vision. One of the most frequent of such procedures is cataract surgery. Loss of vision at any stage of life has a profound psychological, social, educational, recreational and economic effect upon the individual. However, surgical removal of the cataractous lens in adults almost immediately corrects these deficiencies, and the patient is enabled again to live a normal life. It is true that a cataract glass or contact lens is necessary if he is to see clearly, but most patients get used to such implements in a short time.

Cataracts in infants may limit vision to various

extents, from complete loss of form vision to a merely slight difficulty in recognizing persons and objects. To facilitate normal development and learning, congenital cataracts are removed as early as it can be determined that the opacity in the lenses is sufficiently dense to cause a significant impairment of vision. In some instances, operative correction has resulted in restoration of vision in infants as young as four months of age. Following operation, visual and general development can proceed without the limitations that would have been imposed by the cataractous lenses and the consequent poor vision.

Sometimes, congenital cataracts do not come to the attention of the parents until the children reach school age. This delay in discovery results from the fact that the impairment is not great enough to prevent the child's general activities, but is sufficient to interfere with his reading normal print. In this circumstance, the removal of the cataract may enable the child to pursue his education in the regular manner, rather than attend special schools or classes for the visually handicapped.

However, the largest number of persons with deficiencies of vision due to cataracts are adults. All ages are affected, for cataracts may occur even in young persons as a result of diabetes or other metabolic disorders, or from unknown causes. Cataracts frequently cause impairment of vision in mature, working adults who are much younger than the retired or senile group of individuals. These people need to continue their business or professional lives, and by undergoing cataract operations they are enabled to carry on for indefinite periods of time. This operation is of particular importance to the head of a family who, let us say, is a banker or a lawyer and who, at 50 years of age, is prevented by cataracts from reading and continuing to earn a living. Removal of the cataracts results in his complete rehabilitation. In the retired or senile group, removal of the cataract is of great value to the individual's family and friends, but it is even more important to the patient himself, for it restores his pride, his initiative, his independence and his ability to care for himself, if not to provide for his financial support.

In recent years, the use of contact lenses has assisted in the industrial and economic rehabilita-

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tion of persons with cataracts in only one eye. Many of these are young people who have had industrial accidents resulting in an injury to the lens and consequent cataract. Formerly, such eyes even after cataract removal have been unserviceable because a 30 per cent difference in size of images in the two eyes prevented the use of correcting lenses for the aphakic eye. Now, however, through the use of a contact lens on the aphakic eye, this difference is minimized, and satisfactory vision is obtained and rehabilitation for industrial employment accomplished. A similar circumstance can occur in childhood, where unilateral congenital cataract can occur. In the past few years, plastic lenses have been inserted into the anterior chamber in order to make vision possible even in the young infant who could not be fitted for a contact lens.

CORNEAL TRANSPLANTS

During the past few years, the S.U.I. Department of Ophthalmology has performed 91 corneal transplants. Of that number, 60 were successful in that the grafted cornea remained clear. The stories of the individual patients vary greatly, and the degrees of their rehabilitation differ considerably, one from another. Some were restored to full vision, and others were helped materially and were enabled to carry on normal duties.

One of the better stories is told by the retired husband of an elderly patient. The lady had an advanced keratoconus. It was so far advanced that it prevented her closing her eyes over the corneas. In addition, she had cataracts. The corneas were so changed that it was impossible to remove the cataracts. It was felt advisable first to do a corneal transplant and then to remove the cataracts. The patient was completely dependent upon her husband for home care. Her husband did all the housework, for she had never learned to deal with her limited vision.

The corneal transplant was successful, and the cataract was removed. Though the patient now has limited vision, her husband is delighted with the final result. Now she is no longer his personal responsibility. She can carry on all the normal functions of a housewife, can do all of the work around their home, and is able to go out by herself to do her shopping. Of course, she wants to read, and can do some of it through the use of high magnifiers, but standard lenses give her insufficient help. For duty in the home, however, she has been completely rehabilitated.

In contrast to that elderly patient, let's consider a young lady 21 years of age who also had a marked keratoconus. She was unable to go to school and was unable to get a job because of her extremely limited vision. After a successful corneal transplantation, she has become a proficient x-ray technician.

Though it is impractical to tell the story of each of the 60 individual patients, we can say that each is dramatic in its own fashion. Of these 60 patients,

30 were receiving blind pensions or Aid to the Blind. Their annual individual payments from the state averaged nearly \$1,000 per year, and their direct cost to the state was approximately \$30,000, not counting the cost of any of their extra medical and social care. Today, the average income of each of the 60 individual patients is about \$3,000 a year. They pay not only state income taxes but also federal taxes that amount to approximately \$40,000. These added together make a saving of approximately \$70,000 to the taxpayers. By subtracting the cost of medical care and hospitalization for these 60 patients, one finds that there still is a net saving of \$60,000 per year for the nation from just a few patients who have been rehabilitated by corneal transplantation.

Research, of course, is necessary in order to produce better results, to decrease the risks involved in the operation and to improve the postoperative care of these patients. More research is necessary to make sure that the donor material will be suitable to the recipient. Better methods of preservation and storing of the donor material must also be devised if the final results are to improve.

CORRECTION OF RETINAL DETACHMENT

There was a time when a person who developed a retinal detachment was doomed to blindness in the involved eye. Today, such is not the case. In 1919, Gonin demonstrated that retinal detachments could be cured if the retinal holes could be closed by a choroiditis produced by cautery on the sclera. This principle—the closure of retinal holes and evacuation of subretinal fluid—remains the first and foremost factor in surgery for retinal detachment, regardless of the procedure used, e.g., retinopexy, scleral resection or scleral buckling.

There is no doubt that the rehabilitation of the patient with a retinal detachment can be accomplished by correcting the detachment as expeditiously as possible. Cures would be more effective if the diagnosis were made early. Thus, a person receiving a direct blow to the eye or having a spontaneous vitreous hemorrhage should be examined for a detachment. About 60 per cent of detachments occur in people who are near-sighted, and detachments can also occur in people who have had cataract extractions.

Lastly, about one-third of the patients with detachment in one eye have been found to have a detachment in the second eye. The detachment in the second eye is often subclinical—i.e., exhibiting no signs or symptoms. The second eye of a patient with retinal detachment, therefore, should be examined thoroughly. The sudden onset of symptoms of lightning streaks and showers of black spots, with perhaps a defect in the field of vision, with or without the previously described predisposing conditions, makes a detachment suspect. When the portion of the retina concerned with maximum acuity—the macula—becomes involved, the vision suddenly drops to 20/200 or less. If the macula

is detached for one or two weeks, the function is generally impaired, and the best vision regainable may be 20/40 or less—a convincing reason for early treatment.

In the past, and at present, these patients have been faced with prolonged immobilization in bed. Some have elected, for this reason, not to go through with the operation. The patient is placed in bed four or five days preoperatively so that the detached retina may settle. After surgery, immobilization with binocular patching of the eyes is continued for 10 to 14 days, and in some instances longer. The operation done in these cases is usually a retinopexy or a scleral resection. This is good treatment, and success frequently results.

Recently, the scleral buckling operations have had their advocates. These are procedures wherein a partial or completely encircling polyethylene tube is incorporated over diathermy in a scleral resection, so as to push the choroid toward the retina. The volume of the eye is reduced, and in the case of the circling tube, this volume is reduced permanently. The hospital stay that is occasioned by such an operation may be remarkably short. As practiced by the physicians at the Retina Foundation in Boston, the operation isn't preceded by bed rest, for the presence of subretinal fluid is necessary for the surgery, and the patient is out of bed on the first to third postoperative day. In our hands, this has not always been possible. In some patients, retinal fluid remains, and observation on the first or second postoperative day may indicate that a shift in this fluid might lift the retina off the area of diathermy. Thus, bed rest is prolonged until definite evidence of adherence of the retina to the choroid has been observed.

The binocular indirect ophthalmoscope is indispensable for such postoperative viewing, and is a valuable aid in preoperative examination and localization of holes at the time of surgery. One might say that this latter procedure has materially shortened the hospitalization of these patients. There is also a trend toward earlier ambulation, and there is some experimental evidence indicating the advisability of getting patients up and about promptly. In the dog, firm adherence is present at 36 hours. Some elderly patients cannot tolerate bed rest with binocular occlusion. These individuals become disoriented. The method of choice is one of the scleral buckling procedures and the return of the patient to his usual home environment as soon as possible.

The advocates of retinopexy and scleral resection have patients wear pinhole glasses and let them assume only minimal activity when they reach home. The patients usually return to full activity three months after the operation. The advocates of scleral buckling have their patients assume all activities, except that they require the postponement of unnecessary automobile trips and manual labor for between five and seven days. Patients who have sedentary occupations may re-

turn to work from three to six weeks after surgery. Those doing heavy manual work are advised to wait two or three months before doing so.

Once the patient is cured, his rehabilitation is frequently a matter of course. He readily resumes his place in society. Occasionally, after multiple procedures and prolonged hospitalization, a patient may become an "eye cripple." Such an individual becomes dependent and is continually obsessed with concern over his eye disease or other ailments. Assurance, time, and a normal environment and interests all aid in his recovery. In addition, there are some few patients who have bilateral ocular disease with poor return of vision, and there is the patient with only one eye whose vision is poor or whose operation has been unsuccessful. The patients with low vision are aided, in many instances, by various magnifying devices. The person who is totally or almost totally blind requires the aid of institutions that specialize in vocational rehabilitation of the blind.

CONCLUSION

Patients with cataracts, those with occluded corneas and those with detached retinas are the most frequently encountered groups whose vision can be surgically restored and who can be rehabilitated to a normal life. In addition, we should never forget glaucoma, one of the most dangerous ocular diseases. In it, we are unable to restore any of the vision that has been lost, and can hope only to stop the disastrous process.

In summary, we can say that rehabilitation of a visually handicapped person is often possible, though an operation may be necessary. The end result is usually most gratifying.

SYMPOSIUM ON THYROID DISEASES

The fifth annual Surgery, Radiology and Pathology Symposium of the University of Oklahoma Medical School will be held in Oklahoma City on Friday and Saturday, May 8 and 9, and will deal with the diagnosis and treatment of thyroid diseases. The guest speakers will include William H. Beierwaltes, M.D., internist, Ann Arbor; Titus C. Evans, Ph.D., radiation physicist, Iowa City; Edgar L. Frazell, M.D., surgeon, New York City; Henry L. Jaffe, M.D., radiologist, Los Angeles; G. H. Klinck, M.D., pathologist, Washington, D. C.; Rulon W. Rawson, M.D., internist, New York City; Linton Seed, M.D., surgeon, Chicago; and Leslie Zieve, M.D., internist, Minneapolis. The sponsoring organizations include, in addition to the U. of Oklahoma, the Oklahoma Association of Pathologists, the Oklahoma State Radiological Society, and the Oklahoma Chapter of the American College of Surgeons.

For copies of the final program and advance registration forms, address the Office of Postgraduate Education, University of Oklahoma Medical Center, 801 Northeast 13th Street, Oklahoma City 4.

Surgical Rehabilitation For Hearing Impairment

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IOWA CITY

SURGERY IS BUT one important segment of the broad approach to a solution of the deafness problem. However, nothing looms on the therapeutic horizon in otology as promising or effective as modern temporal bone surgery. This approach deals with structural or mechanical defects, rather than with the neural or electrochemical defects in the hearing system.

Mechanical types of hearing impairment range from congenital failure of development of the external auditory canal and middle ear structures, to ossicular fixation principally caused by otosclerosis, to eustachian tube insufficiency, and to inflammatory obstruction or destruction of the middle ear components. The hearing loss usually is characterized by a pure tone audiometric air bone gap of 25 to 50 decibels. The bone conduction thresholds indicate the maximum hearing improvement to be achieved, and if these thresholds do not exceed 30 decibels, it is possible to restore useful hearing to a level not requiring the use of a hearing aid. Ingenious surgical developments are occurring so rapidly as to tax the efforts of even the most imaginative surgeon in keeping abreast of them. Such a flurry of enthusiasm seems to promise further successful progress in our efforts to prevent or cure serious losses of hearing.

THE NATURE OF THE PROBLEM

It is estimated that 17,000,000 Americans have impaired hearing. At least 3,000,000 children are already barred by limited hearing from leading happy, successful lives—80 per cent of them afflicted before their fifth birthday. Accordingly, more youngsters suffer from deafness than from blindness, cerebral palsy and epilepsy combined.¹

Recently, the Iowa State Department of Health appointed and organized a Committee for Conservation of Hearing, the purpose of which is to function in an advisory capacity to any agency regarding the problems of hearing impairment. The services of the Committee are available to industry, agriculture, education and to the broad spectrum of public health and welfare services within the state. This move on the part of the State Department of Health recognizes the increasing importance of hearing impairment in our population, particularly its incidence in those of school age

for whom early detection and treatment may be most beneficial.

Few of us realize that hearing is one of our most precious sensory faculties until we have lost it. Good hearing constitutes our most intimate contact with our environment. It enables us to be aware of activities going on around us without the need for seeing and feeling, although these other perceptive abilities may enhance our auditory appreciation considerably. To be isolated from one's environment because of a hearing loss soon leads to profound personality changes that brand the afflicted individual as different from and, in reality, inferior to his fellow man.

Impaired hearing doesn't show. It isn't visible. It isn't a tear-jerking challenge to sympathy and charity. It isn't an exhibition of public failure to mobilize funds and scientific talent. It is just terribly personal.

It is easy to belittle the subject by saying, "Oh, there are worse things than deafness. After all, no one dies from it." But such a remark isn't true. In a way, people do die of deafness—by suffering sickening embarrassments every day. Impaired hearing can upset dignity, undermine the personality and damage the living spirit. It can bring tension, anxiety and fear. Small wonder, then, that

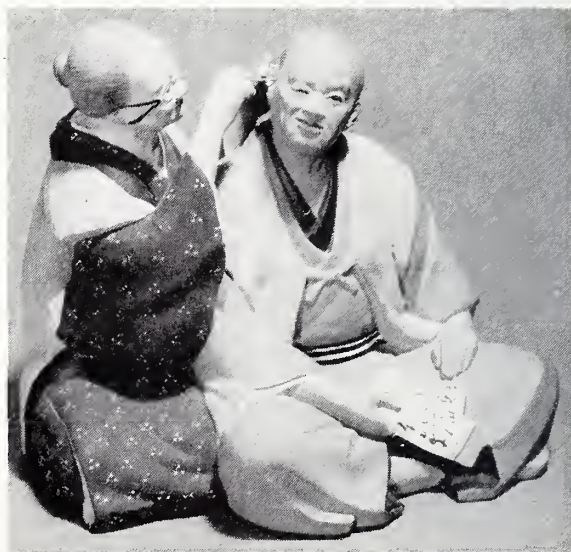


Figure 1

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the hard of hearing may feel trapped in an invisible prison, alone in silence, unable to hear the rest of the world, and perhaps even worse, unable to make the rest of the world understand them.

MYRINGOTOMY

On the Island of Hokaido, in Japan, live a class of artisans who are famous for their creations in plaster, the Hokaido dolls. Those that are shown in Figure 1 have a certain appeal to otologists, for they depict an ancient oriental custom of hygiene. They also suggest a method of treatment for deafness that is practiced today. Precisely what instrument the oriental lady is using is left to the imagination, but the expression of satisfaction on the gentleman's face would suggest that she is not performing a myringotomy. Yet, in the presence of intratympanic transudate or exudate, myringotomy is one of the most satisfactory and effective otological procedures for relieving pain and hearing loss. It provides drainage of the middle-ear abscess. It relieves pressure and circulatory compression, thus restoring the nutrient channels that sustain tissue vitality and carry resistant forces to the site of the infection. It permits essential ventilation and the reduction of edema within the eustachian tube, so that normal function of the mechanical system of hearing can be restored.

In these days of careless antibiotic indulgence and increasingly resistant bacteria, a myringotomy alone is effectively therapeutic, and provides an opportunity to secure a pure specimen for culture, identification and sensitivity studies. It is disturbing to know that this fundamental surgical procedure is being neglected or even abandoned by some segments of the medical profession. Such attitudes lead to an increased incidence of ischemic necrosis of the tympanum and consequent hearing loss. The persistence of necrotic residuals of otitis media, despite the virtual elimination of acute mastoiditis by antibacterial drugs, has stimulated the development of some excitingly successful surgical techniques ranging from creative to reconstructive surgery. Some of them employ principles of both creation and reconstruction.

BASIC TECHNIQS OF TEMPORAL BONE SURGERY

The basic patterns for modern temporal bone surgery are: (1) mastoidectomy (simple); (2) mastoideo-atticotomy (modified); (3) tympano-mastoidectomy (radical). From these three procedures have developed the various techniques of tympanoplasty. But before tympanoplasty as it is known today became an instrument of rehabilitation, the foundations of modern temporal bone surgery were laid down by Lempert in his descriptions of endaural mastoidectomy and the fenestration operation.^{2,3} Some time later, Lempert's peritympanic approach to the middle ear was used by Rosen and others to revive an old procedure for mobilizing the ankylosed stapes.⁴⁻⁷ These two

events and the evolution which followed required tools of special design and intent. Necessarily, these tools provide illumination and magnification, and are delicate enough to cope gently and precisely with the minute anatomical structures of the middle ear. The fact that these instruments are presently available in numbers and designs limited only by the imagination and ingenuity of their creators suggests that although some technics are standardized, exploratory procedures are still being employed. In order that these microsurgical instruments may be used most carefully and effectively, the aid of the otosurgical microscope, with its integral source of light and wide range of magnification, is essential.

The restoration of hearing is accomplished through reconstructing or replacing conditions which approach those existing in unimpaired ears (Figure 2). Essentially, those conditions are the presence of two elastic windows, through one of which pressure impulses may be driven sooner and with slightly more force than through the other. In other words, sound pressure must not be permitted to strike at both windows simultaneously, for in such a situation it could not create a disturbance of inner-ear fluids essential to sound transmission. When sound pressure hits one window before the other, it creates fluid eddies which play upon the basilar membrane in the cochlea at selected places according to the frequency and intensity of the sound source. This is accomplished by the drum membrane's focusing pressure along the ossicular chain and at the same time protecting the round window. The resultant phase-difference contributes to the mechanical element of hearing. Keeping these principles in mind, one is prepared to see that a variety of surgical technics may be utilized to bring about an improvement in hearing.

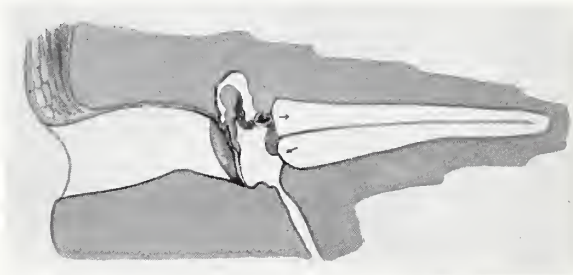


Figure 2

The mechanical disorders of hearing are conveniently considered under three headings: (1) congenital deformation; (2) necrotic and cicatricial defects; and (3) otosclerosis.

CORRECTION OF AUDITORY DEFECTS

Congenital atresia of the external auditory canal, often associated with microtia, is relatively rare. There are two principal reasons for considering surgical creation and reconstruction. The most ob-

vious one is restoration of hearing. The other is not so obvious unless one is familiar with the variations of maldevelopment. One must be alert to the possibility that apparently independent cysts and fistulas in the vicinity of the deformed auricles or in the upper lateral neck may be extensions of cholesteatoma arising from an epithelial pocket usually found adjacent to the middle ear (Figure 3). Such a focus represents an abortive attempt in development to establish an external auditory canal and the external layer of the tympanic membrane. Squamous epithelium trapped in this manner continues to desquamate and accumulate, forming an erosive mass which destroys surrounding tissue. Some surgeons become preoccupied with the cosmetic features of such defects, and forget or ignore the functional issues involved. Exteriorization is necessary, through the creation of an external auditory canal.

Congenital atresia of the external auditory canal may be accompanied by deformities of the middle ear structures and cavity. The management of these problems consists of the employment of the principles and technics of tympanoplasty—i.e., the use of strategically placed skin grafts and the conversion to functional usefulness of whatever mobile structures of the ossicular chain may be present. The same principles and technics are used when these structures are destroyed by infection.

In general, there are five situations to be anticipated, but one cannot always be certain which of the conditions exists until actual surgical exposure has revealed the full extent and magnitude of the pathology. The surgeon is guided by his knowledge and experience with auditory physiolo-

gy and pathology in determining the reparative procedure to be used.

1. *Repair of a Tympanic Membrane Defect.* The simplest example of reconstructive surgery is found in the closure of a perforation of the drum membrane (Figure 4). In the presence of such a defect, the drum can act efficiently neither as a vibrating disc nor as a protective membrane covering the round window. A myringoplasty may be performed. This consists of removing the epithelial layer of the remaining drum and replacing it with a skin graft to cover the perforation. The success of a myringoplasty, like that of other plastic procedures, is dependent upon the functional integrity of the eustachian tube; the mobility of the ossicular chain, especially the stapes footplate; and the absence of any evidence of active infection. Other preoperative tests must show that the function of the auditory nerve will permit restoration of serviceable hearing if the drum membrane can be repaired. An artificial diaphragm placed over the defect will often indicate the prospects of success.

2. *Repair of Epitympanic Membrane Defect.* Perforations in this area usually are associated with

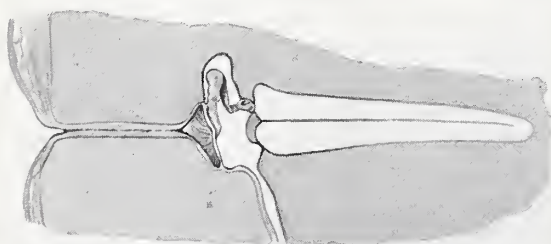


Figure 3

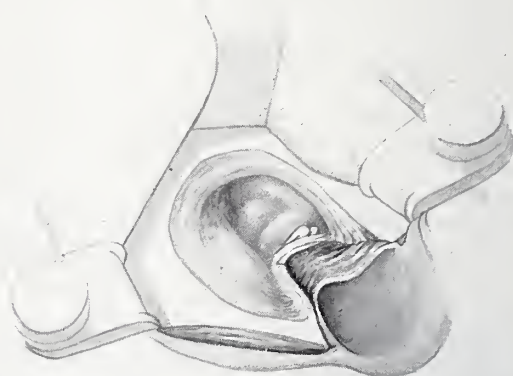


Figure 5

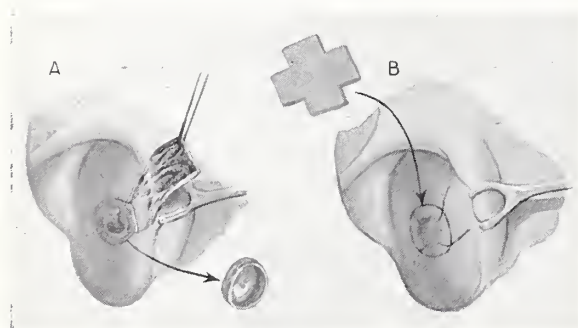


Figure 4

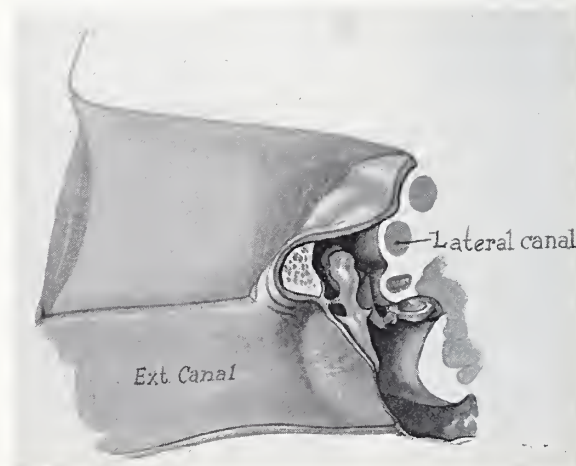


Figure 6

squamous epithelial tracts leading into the attic of the middle ear and antrum of the mastoid. Characteristic of this enclosed or trapped epithelium is its development of cholesteatoma, which causes progressive necrosis of invaded tissues. Depending on the relationship of the fistula to the ossicular chain, particularly the incus, the entire middle ear mechanism may be salvaged or sacrificed in the process of excising the infection. In the event that the middle ear mechanism can be preserved, excellent hearing results can be achieved by leaving a "bridge" between the superior margin of the tympanic membrane and the epitympanic space so that the tympano-meatal membrane may be suspended above the incus and head of the malleus, as shown in Figures 5 and 6.

Should this not be feasible, and should removal of the incus and malleus be necessary, or in case they have been destroyed by the infection, still another kind of repair may be used.

3. *Repair of Tympanic Defect When the Incus and Malleus Are Absent.* In this example, the stapes remains intact and mobile. Suitably fashioned skin grafts may be laid over the middle ear in such a manner as to maintain a space between the graft and the hypotympanum so that a tunnel is made to connect the round window with the tympanic orifice of the eustachian tube. At the same time, the graft is placed in contact with the head of the stapes so as to create an effective collumella for the transmission of sound, at the same time protecting the round window (Figure 7).

4. *Repair of Tympanic Defect When the Incus, Malleus and Stapes Crura Are Absent and the*

Footplate Mobile. Without the possibility of creating a collumella effect, the incidence of hearing improvement is considerably reduced. However, the placing of the skin graft so that it affords protection to the round window without covering the oval window occasionally results in an appreciable hearing improvement (Figures 8 and 9).



Figure 8



Figure 7

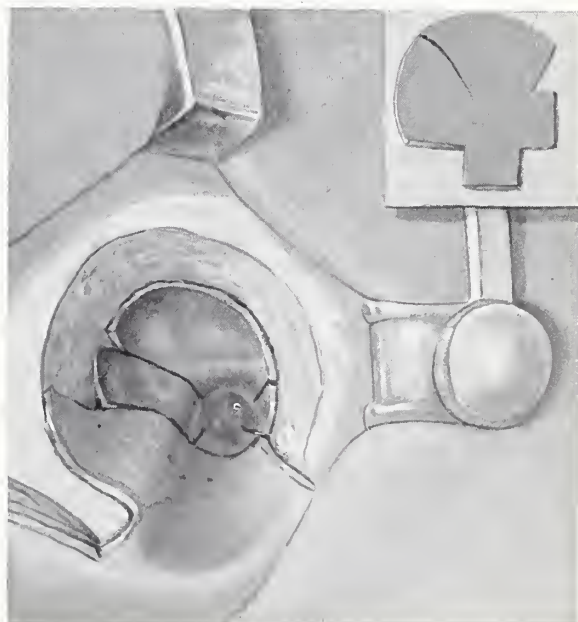


Figure 9

5. *Repair of Tympanic Defect When the Incus, Malleus and Stapes Crura Are Absent, and the Footplate Is Fixed.* In the event the previously described technics (3 and 4) are not productive of satisfactory results, fenestration of the horizontal semicircular canal may be considered. The result of this procedure balances on the degree of success achieved in creating and maintaining protection of the round window and the mobility of the new window (Figure 10).

THE CORRECTION OF OTOSCLEROSIS

The next most common cause of hearing loss with which we contend is otosclerosis. Its histology is well known, but its etiology is obscure. It causes ankylosis of the stapes footplate. The process, some investigators say, may be initiated by otitis media in infancy or early childhood. The hearing loss, however, is remotely related. That is to say, it occurs considerably later than does the inflammation. There is usually no obvious residual inflammation. It seems to follow a hereditary course, but it skips generations. Apparently it is sex-influenced, but not sex-linked. The incidences among men and women are about equal. It is a hearing loss of young adults, and it is progressive. Since there is no medical control for this kind of hearing impairment, surgery offers the only hope of natural hearing improvement. Currently, there are two

surgical approaches to this type of hearing loss—stapes mobilization and fenestration.

Stapes mobilization has a long and interesting history. It was accomplished first in about 1876 for a series of several hundred operations, and then abandoned as permanently ineffective. It was revived in 1953,⁸ and has since undergone severe critical review, but so far has survived some rigidly demanding tests. The circumstances under which it is now performed are considerably improved over those which existed some 80 years ago. The lower part of the ossicular chain is easily exposed by a peritympanic incision which permits an epithelial cuff and the posterior half of the drum membrane to be elevated (Figure 11). Under the objective of the otosurgical microscope, minute details of the incudo-stapedial joint, the crura and the footplate can be observed.

Mobilization of the stapes may be accomplished by a variety of technics. One of these consists of



Figure 10

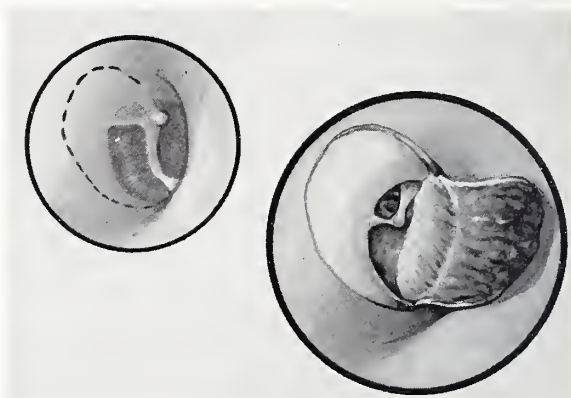


Figure 11



Figure 12

direct attack on the footplate through the use of microchisels which were introduced to this country by Heerman⁹ (Figure 12). Approximately 83 per cent immediately successful results may be expected with this technic. However, with this and other methods, regressions occur. Over a span of

five years they have taken place in about 21 per cent of cases, lowering the net successful results to approximately 62 per cent. Thus, because of these regressions, the problem of restoring the hearing of a sizeable number of patients still exists.

Two variations of the mobilization operation seem to hold the prospect of more permanent results. One of these consists in the use of a stainless steel strut interposed between the footplate and the long process of the incus, as described by Schuknecht¹⁰ (Figure 13). The other employs a tiny plastic tube as an artificial strut placed between the incus and a vein graft substituted for the footplate of the stapes, according to Shea¹¹ (Figure 14).

These and other possibilities are under continuing investigation at the University of Iowa Medical Center. Experience with over 1,000 stapes-mobilization operations confirms the progressive improvement in results of these newer technics over the earlier attempts to restore hearing.

The fenestration operation retains its place of esteem in the surgery for otosclerosis.¹² Technically, it requires a mastoidectomy, the creation of a tympano-meatal skin flap which converts the mastoidectomy to a modified radical mastoidectomy, and fenestration of the horizontal semicircular canal (Figure 15). The tympano-meatal flap is used to cover and protect the new fenestra. Its use is restricted to the exacting requirements of an essentially normal hearing nerve function, as assessed by bone conduction, and a mechanical defect of 35 decibels or more, as determined by air conduction thresholds. The operation has stood the test of time. It has been reliable for 20 years, and its results compare favorably with the latest



Figure 13



Figure 14

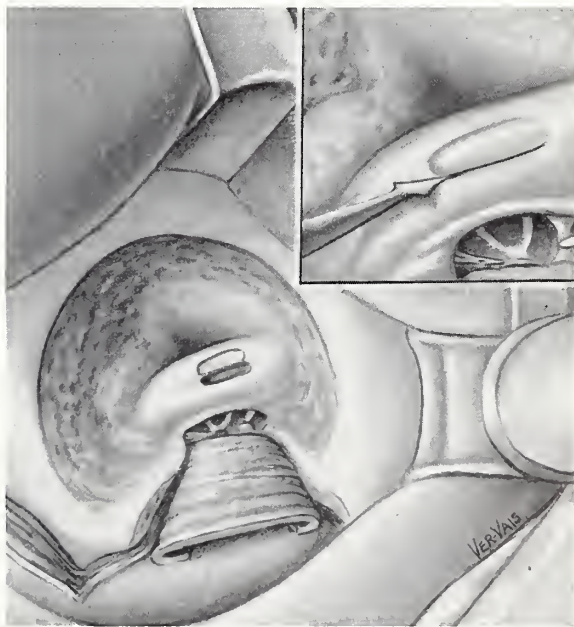


Figure 15

results of stapes mobilization. Seventy-six per cent of about 500 patients who had the fenestration operation five or more years ago continue to have hearing of better than the 30-decibel threshold. Some of them were fenestrated 12 years ago. However, stapes mobilization is preferred as a preliminary procedure because it yields better results qualitatively. That is to say, it is possible through that means to restore normal hearing.¹³ When stapes mobilization fails to improve hearing, the fenestration operation may be employed with confidence, provided the bone conduction thresholds of hearing are within the normal range.

CONCLUSION

These modern surgical technics require skill of the order not usually acquired by an occasional experience with them, but with practice and an understanding of the hearing principles involved, the surgeon adequately trained in the fundamentals of modern temporal bone surgery can achieve excellent results with them. These procedures make up the armamentarium with which we currently attack the problems of mechanical hearing impairment. They certainly do not con-

stitute a *therapia magna*, but the results achieved indicate that they are developing in the right direction.

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The State Division of Vocational Rehabilitation

An Additional Tool for the Practicing Physician

RAY WITTRIG

IOWA CITY

THE COMMUNITY physician knows that many of his patients have some needs for which he himself is unable to provide. Thus, the state-federal plan for vocational rehabilitation services is one of the resources to which he will want to refer a number of his physically or mentally handicapped patients. The purpose of this paper is to point out how he can make use of this agency, thereby adding another facet to his professional usefulness and, perhaps more importantly, improving the chances of complete restoration for his disabled charges.

With his experience and training, the physician is often the first person to become aware of the complex of problems that result from permanent disability. Good medical care is essential in stabilizing, reducing or removing physical disability, but too often there are concomitant aspects of the

problem that negate the medical treatment unless attention for them is available as well. These problems usually arise in the areas of mental, social and economic adjustment.

The State Division of Vocational Rehabilitation regards medical evaluation and treatment as essential first steps in the rehabilitation process, and the agency may provide funds for physical restoration services for vocationally handicapped persons to the extent of their inability to pay. In addition to medical services, the agency provides vocational counseling, vocational training when needed, job-placement services and follow-up. Thus, many of the social and economic problems arising out of disability receive the needed attention. The ultimate purpose of the rehabilitation program is, of course, to assist vocationally handicapped individuals to become self-sustaining or partially self-sustaining men and women.

Tragic losses occur to the human personality

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when the disabled individual cannot be adequately treated. Total rehabilitation, inherently, implies adequate treatment within our ability to provide it, but it also implies the coordinated efforts of a team of professional workers who understand the common goal—the restored individual, physically, socially and economically—and contribute their special skills to the attainment of that objective.

THE SERVICE MUST BE TIMELY

There are several crucial aspects to the process of rehabilitation, and the first of them is the timeliness of the services. Many disabled persons fail to receive the help they require when they have the greatest need for it. Our medical men provide immediate treatment for accident victims and acutely ill patients, and as busy physicians they may have some reason for thinking that their responsibility ends with that care, or at most with the attention they give to the chronic physical ailments that sometimes ensue. But the physician's training and experience place him in a position to anticipate the non-medical implications of residual disability. Therefore, it is often he who must enlist the aid of people who he knows can provide the services the patient needs, and he must call upon them at the most appropriate time.

Delaying the start of such rehabilitative work beyond the conclusion of medical treatment may result in the patient's becoming a physically stabilized person, but remaining a social or economic invalid. If he is to remain so for any length of time, his rehabilitation potential will decrease, and sometimes the resultant lack of will to reassume his place in society becomes more handicapping than is the physical disability itself. Consequently, the community physician must be prompt in choosing the appropriate service and in referring the patient. When vocational rehabilitation services are required, patients may be referred to the state agency or to the counselor of the agency who serves the community.

THE TEAM APPROACH IS ESSENTIAL

A second important aspect of the rehabilitation process is the need for coordinating the several services which may be dealing with the disabled person. This coordination is commonly referred to as the "team approach." It implies the combined efforts of several professional workers, each of whom contributes his specialized skills to the solution of the problems at hand, and each of whom has a clearly defined individual responsibility which he carries out under the leadership of a coordinator.

The responsibility for leadership does not necessarily remain in one individual, but may pass from one professional worker to another. Thus, the physician will assume leadership in the medical-treatment phase of the process, but pass it on to another team member at the proper time. The rehabilitation counselor may often assume responsi-

bility for services such as vocational evaluation, vocational training and job placement, together with the other services that are needed in preparing the patient for employment consistent with his limitations.

In many instances, the rehabilitation of the severely handicapped can be accomplished best in centers where complete facilities are available for physical restoration, vocational evaluation and vocational training within a single institution. Facilities of this type are not generally available, however, and there appears to be a need for the development of a comprehensive treatment center of this sort in Iowa. The alternative is to seek the separate services wherever they may be found. This, of course, is not always practicable, or even possible. Although Iowa now has centers that provide some of the needed services, they should be expanded to provide really comprehensive rehabilitation. In such a center, a rehabilitation team would be able to work most effectively and efficiently.

In any case, the coordinated rehabilitation program requires that each professional worker have an understanding of the objectives of the group, some appreciation of the obstacles to be overcome, and a willingness to work cooperatively toward the ultimate goals of the group.

SPECIAL SERVICES MUST BE ARRANGED FOR

A third crucial aspect of the rehabilitation process is the availability of resources needed in providing adequate service. Few communities have access to all the facilities necessary for the total rehabilitation of the disabled person. Community physicians certainly cannot be expected to know which ones are available and where they are to be found, especially when they are located at a considerable distance. In this respect, the vocational rehabilitation counselor can be of considerable assistance, and besides locating the services he can assist the patient in making arrangements for securing them. The facilities of which I speak include ambulation training, speech therapy, vocational evaluation, vocational training and the other special services that are available in few communities.

MANY SORTS OF INVALIDS MEET ELIGIBILITY REQUIREMENTS

In addition to the patients who come to the attention of physicians through accidents or acute illnesses, there are a large number of other physically or mentally handicapped people in our communities who need rehabilitation in order to become self-sustaining. Those people need the kind of comprehensive service which we envision as possible if we marshal our resources and approach the problem cooperatively.

Our present laws, both federal and state, enable us to provide almost any type of service needed to reduce or eliminate vocational handicaps, in-

cluding medical and related care, vocational counseling and training, and job placement.

The eligibility of any person for these services must be established through medical diagnosis in order to determine the presence of the disability, the limitations that it imposes, the prognosis, and the feasibility of additional treatment and other services. Generally, this diagnosis is requested by the vocational rehabilitation counselor; it is provided by the community physician; and it is paid for by the state. Needed medical services may be purchased by the state, if the patient's eligibility for financial aid has been proved. Payment for medical service is made on the basis of fee schedules that have been worked out with the State Medical Society. The physician becomes an important member of the rehabilitation team, and aids in developing a comprehensive plan of

rehabilitation for the disabled individual. Competent medical opinion and treatment are basic to the entire rehabilitation effort.

REHABILITATION IS AN ECONOMICALLY SOUND PROGRAM

Aside from the preservation of human values, there is a great need for the reduction of dependency among those who might benefit from comprehensive rehabilitation services. Experience has shown that many of these people need not depend upon public welfare funds indefinitely. Through relatively small expenditures of public money for rehabilitation services, they often can be made self-supporting, independent, productive citizens.

We must guarantee adequate budgets for such public programs, but more important, we must foster and develop community interest in a cooperative approach to them.

State University of Iowa College of Medicine Clinical Pathologic Conference

SUMMARY OF CLINICAL FINDINGS

A 60-YEAR-OLD white laborer was admitted to University Hospitals with the chief complaint of a lump in the penis. Twelve months prior to admission, he had noted a small nodule beneath the skin on the ventral surface of the penile shaft. It started about one inch from the tip of the glans, but progressively increased in size until it involved the entire shaft and eroded through the skin. Secondary infection became superimposed on the ulcerated lesion, and in spite of parenteral antibiotic therapy administered by his physician, it continued to progress.

Physical examination at the time of admission revealed no significant abnormalities of the head and neck. The lungs were clear to percussion and auscultation. The heart sounds were normal in intensity and rhythm. No murmurs were present. No masses or organs were palpable in the abdomen. The distal end of the penis was markedly enlarged, particularly on the ventral surface. The enlargement extended to within a half-inch of the junction of the penis with the abdomen. Numerous purulent ulcerated areas dotted the tense, shiny skin. Purulent material with a pungent odor escaped from the open areas. The inguinal lymph nodes were not enlarged. The prostate was Grade 2 enlarged and of a benign type.

A urinalysis was normal. The hemoglobin was 12.5 Gm./100 cc., and the white blood cell count was 9,550/cu. mm. The blood urea nitrogen and creatinine were 12 and 1.0, respectively, and the serologic reaction for syphilis was negative.

A biopsy of the lesion was made, and a total

amputation of the penis and a perineal urethrostomy were done. The patient's postoperative course was uneventful until the fourth postoperative day, when his temperature rose to 103° F. The administration of Achromycin orally and intramuscularly was followed promptly by a fall in temperature to normal. When discharged from the hospital on the thirteenth postoperative day, he had a urinary stream of normal size and force.

On the day he was discharged from the hospital, he developed a chill and fever. He returned to the hospital the next morning with a temperature of 102.4° F. Except for slight dysuria and a productive cough, he had no localizing symptoms.

On physical examination, he appeared acutely ill. Coarse, moist rales were noted in the base of the right lung. His pulse rate was 104 beats per minute. The operative site was completely healed except for one small area, and it did not seem to be infected. Both epididymi were tender, and the stump of the corpus spongiosum was dark brown and surrounded by an inflammation of the perineal skin.

The patient's urine was loaded with white and red blood cells. The hemoglobin was 9 Gm./100 cc., and the white blood cell count was 30,550/cu. mm., with 90 per cent polymorphonuclear forms. The sedimentation rate was 105 mm./hr., and the hematocrit was 35 per cent. An excretory urogram showed normal kidney function bilaterally, and a chest x-ray showed areas of bronchopneumonia in the right costophrenic area. Penicillin and streptomycin were administered, and the temperature and white blood count promptly returned to normal. He was discharged 10 days after admission.

He returned to the outpatient department two weeks later for calibration of the perineal urethrostomy stoma. An 18 French catheter passed without difficulty, and dilatation to 22 French was accomplished.

Two months later, an enlarged lymph node was found in the right superficial inguinal region. Prior to biopsy of the enlarged node, 1,000 ml. of whole blood was administered to correct the anemia which had been found at that time. A chest x-ray was normal. After a biopsy of the inguinal node had been done, a radical resection of the lymphatic tissue of the groin, superficial inguinal, and deep inguinal areas was performed. The operation was concluded without incident, but postoperatively the patient's blood pressure fell to shock levels. During the procedure, the estimated blood loss had been 350 cc., and he had received 500 cc. of whole blood. Postoperatively, his hemoglobin was 5.2 Gm./100 cc., his white blood cell count 10,350/cu. mm., and his hematocrit 16 per cent. Additional blood transfusions with NeoSynephrine were administered to combat the shock. Within several hours, the shock state was relieved, but additional blood transfusions were necessary to maintain a normal hemoglobin level. No evidence of concealed or obvious hemorrhage was present.

For the next 10 days, the patient had a slight fever, although he was receiving Combiotic and Achromycin. On the eleventh postoperative day, his temperature rose to 104° F. A white blood cell count was 25,400/cu. mm., and a blood culture was positive for hemolytic *Staphylococcus aureus*, which was sensitive to Chloromycetin, Albamycin and erythromycin. These drugs were immediately substituted for the Combiotic and Achromycin. The temperature returned nearly to normal after three days, and the white blood cell count dropped to 10,050. The operative wound showed edema and exuded moderate quantities of serum. Its edges became necrotic and were debrided. A culture of this area revealed *Pseudomonas aeruginosa* and *Proteus vulgaris*. A second spike in temperature occurred 10 days later, and a blood culture again revealed hemolytic *Staphylococcus aureus*. The white blood cell count rose to 45,000/cu. mm. Kantrex (kana-mycin) was added to the antibiotic therapy, and the temperature and white blood cell count again returned to near normal. Further blood transfusions were necessary to maintain a normal hemoglobin and hematocrit. The day prior to his death, his white blood cell count rose again to 28,000, and passive congestion of the lung fields developed. He expired suddenly one month after his last operation. Except for a slight transient rise, the blood urea nitrogen and creatinine determinations were normal.

SUMMARY OF CLINICAL DISCUSSION

Dr. Reuben Flocks, Urology: This patient presented many interesting phenomena, and I should

like to discuss them from several points of view: (1) the pathological process; (2) the problem presented by the lymph node metastasis from carcinoma of the penis; and (3) the interesting questions arising from the relationship between the pathogenesis of cancer and the epidemiology of penile cancer. In addition to those three aspects of penile cancer *per se*, the problem of infection associated with surgery upon this organ also needs elucidation.

The lesion usually starts as a small wart-like structure, either upon the glans, usually the corona, or upon the foreskin. If the foreskin cannot be retracted or for one reason or another is not retracted, the lesion isn't noticed promptly by the patient himself. When such lesions are diagnosed early, they are curable for all practical purposes, and thus carry an excellent prognosis. At that stage, the lesion has not entered the lymphatics, usually has not spread through the blood stream and can readily be excised through a simple amputation of the penis.

Usually, however, such an early diagnosis is not made, and the lesion progresses to invade the corpora cavernosa and spongiosum. When this occurs, entrance into the lymphatics is very common. There is a spread both through the superficial lymphatics leading to the superficial and deep inguinal nodes, and also through the deep lymphatics to the deep pelvic lymph nodes. When this has occurred, simple amputation of the penis is an insufficient means of curing the lesion, and for all practical purposes the prognosis is very bad, since radical removal of the regional lymph nodes and the deep pelvic nodes is fraught with great danger. There almost always is secondary infection in them. Moreover, block dissection of the entire area is impossible if one considers the problem of the deep pelvic lymph nodes.

When this patient first presented himself at the hospital here, he had a large, secondarily infected tumor involving the glans penis, the skin of the prepuce, the skin of the shaft of the penis, and a great deal of the corpora cavernosa. One would therefore expect definite involvement of both the superficial inguinal nodes, the deep inguinal nodes and the pelvic nodes. Because of the high incidence of secondary infection, and because there was a definite secondary infection in this instance, palpitation of these nodes did not necessarily mean that they were already involved, and removal of the nodes together with the lesion would have led to severe infection of the wound. The urologist in charge was therefore correct in deciding to do a simple amputation of the penis and to do a secondary removal of the regional lymph nodes two or three months later, after infection had been controlled. Such an operation was carried out, and in addition, the patient was given Achromycin, a broad-spectrum antibiotic, to control the infection. He apparently got along nicely following the oper-

ative procedure, and left the hospital voiding satisfactorily through the stump of the urethra. He returned within 24 hours, however, with evidence of a disseminated infection. X-ray films of the chest showed evidence of pneumonia.

Dr. Wm. Rohner, Radiology: At that time there was an infiltrate in the right lower lobe. The previous film, taken in April, had been normal.

Dr. Flocks: The question that had then to be faced was whether the patient's pneumonia was simply secondary to the original infection, though the wound appeared to be healing nicely, or whether there was in addition a localized pelvic thrombophlebitis around the residual urethra and in the deep pelvis. A tentative diagnosis was made of infection of the wound edges plus a pneumonia, and intensive broad-spectrum antibiotic therapy was instituted. Within two weeks, the patient was well and was permitted to return home.

Two months later, having been well at home, he reentered the hospital for study of the regional lymph nodes. At that time his general condition was good, excepting for a severe secondary anemia. There was no leukocytosis.

What could have been the cause of the severe secondary anemia? Was it due to infected regional lymph nodes? Was it due to a low-grade pelvic thrombophlebitis? The organism had not been cultured at any time, and thus I cannot tell what the organism was from the description in the protocol, but we can assume that it was a staphylococcus, since later a blood culture was positive for a staphylococcus. Could a staphylococcal infection remain latent over a period of two months? I wonder whether some of the discussants who are experts in this field will consent to talk briefly about this aspect of the patient's infection. Could he have had a staphylococcal infection as a part of the infection at his first operation, with that aspect of it then remaining latent for two months? In other words, could he have gone two months without showing any evidence of it other than a secondary anemia?

At any rate, the opinion of the clinician who took care of the patient was that his main difficulty was associated with the enlarged lymph nodes—that they were the cause of his anemia as a result of their having been invaded by tumor and possibly secondarily infected. Consequently, he was given 1,000 cc. of blood, and a lymph-node dissection was done in the groin area. Not only tumor but also severe infection was found.

Following this operation, healing was very poor, and the wound broke down and became severely infected. A breakdown of this wound is not at all an unusual phenomenon. About 79 per cent of a series covered in a report from Brooke Army Hospital, just a few weeks ago, showed secondary breakdown and gross infection. The causes of the breakdown were threefold: (1) infection, (2) poor blood supply, and (3) tension associated with

lymphatic filling of the wound. Thus, at this stage of the patient's treatment he had a severely infected wound which was treated locally and generally to counteract the infection and promote healing.

It was interesting to note that a combination of Combiotic and Achromycin was used. Isn't there some evidence that the penicillin portion of Combiotic might be antagonistic to the broad-spectrum antibiotic? Could this be discussed by whoever talks on therapy for infection in this case?

At any rate, the infection wasn't satisfactorily controlled, evidence of septicemia appeared, and a blood culture was positive for *Staphylococcus aureus*. At that time, a consultation with the Department of Medicine was requested.

Dr. G. E. Perret, Surgery: The protocol mentions a postoperative hemoglobin, red count and hematocrit. I was wondering what the respective preoperative values were. Furthermore, I should like to ask Dr. Flocks why this patient went into severe shock from what he regards as a relatively benign operation.

Dr. Flocks: I think that we can give you the preoperative levels. According to the protocol, the hemoglobin had been 13.7, and there had been 9,550 white blood cells. As regards the surgery, it is not a benign operation. It is a major surgical procedure, but ordinarily there isn't a great deal of blood lost during it, and consequently I don't believe that the shock resulted from blood loss. It may very well have been due to the fact that the wound and the lymph nodes were grossly infected, and that large quantities of this infected, broken-down material was suddenly pushed into the blood stream during the manipulation incident to the surgery.

Dr. Ian M. Smith, Internal Medicine: I am here. I believe, because as Dr. Seeborn says, "This patient had staphylococcal septicemia. He got the right drugs, but he died. Why?"

I'll see whether I can answer that question. First, I'd like to go back to the fourth paragraph of the protocol, which says that on the fourth postoperative day the patient developed a fever. I don't think Dr. Flocks will object to my saying that a great deal of G.U. surgery is septic surgery. In other words, such operations are performed in infected fields. What type of infection is likely to be stimulated? It would be intelligent to guess that it would be either coliform or staphylococcal.

This patient was treated with tetracycline, and I think that the basis for that treatment was the possibility of a coliform infection. The advantage of tetracycline is that it is effective against coliforms, but is bacteriostatic and not bactericidal. Therefore, it might well suppress the infection, but not cure it. Now, what we needed in this instance was a broad-spectrum drug that would cure anything that might turn up. I don't think it was possible to treat this patient with an antibiotic that

would take care of all possibilities. This patient apparently did respond to the antibiotic, and it seems probable that it was the right one. After nine days, he was taken off the drug and he had a clinical relapse. If he had a coliform infection, I think that four weeks of treatment with tetracycline combined with streptomycin (a bactericide) would have been indicated. If he had a staphylococcal infection, I think he probably needed at least four weeks of treatment too.

We come to the paragraph where the man was back in the hospital and his blood count showed 9 Gm. of hemoglobin per 100 cc. Undoubtedly neoplasms can cause anemia. Apparently this was a fairly well localized neoplasm, however, and might not be expected to produce an anemia. I think that the cause was a chronic septicemia—a staphylococcal septicemia. In those circumstances, a 9 Gm. hemoglobin might well be expected, along with a 30,000 white cell count.

We read along further and find that the next episode was characterized by enlarged lymph nodes. In talking with Dr. Flocks, I've learned that during the operation on those nodes, some pus seemed to be visible. Thus, in that procedure the surgeon cut through infected tissue, and it is reasonable to suppose that bacteria were disseminated. I should like to refer again to the point brought up by Dr. Perret, that the patient went into shock for no apparent reason. Suppose he had a gram-negative infection or an abscess in the area which was opened. In such a situation, a large number of organisms would have been released into his circulation, and he could have had bacterial shock.

Now, let's deal with the point that Dr. Flocks brought out in commenting on the combining of Combiotic and Achromycin. Combiotic contains penicillin and streptomycin. Dr. Jawetz and Dr. Dowling have published studies showing that experimentally as well as clinically Achromycin (tetracycline) and penicillin can be antagonistic. We too, in a study of staphylococcal septicemia that is about to be published, have assembled statistically acceptable evidence that the two are antagonistic in this situation. I think that if this is true we can think of this patient as having been treated with streptomycin only, and that if he had a staphylococcal infection acquired in this hospital, where 60 per cent of the staphylococcal strains are resistant to streptomycin, he probably was not receiving any effective antibiotic treatment!

The next point is that the patient's blood contained a hemolytic *Staphylococcus aureus* that is sensitive to chloramphenicol, novobiocin (Albamyacin) and erythromycin. I heard by the grapevine that although these sensitivities were verified for the first strain cultured, subsequent strains may have been resistant to erythromycin. It does happen that during treatment some organisms become resistant to antibiotics, but very rarely except for

streptomycin. If one follows a closed infection like a septicemia and follows the staphylococcal phage types, he finds that an organism resistant to new antibiotics is usually one that has been introduced by contamination. This is shown by a change in phage type. Therefore, although we may have started with a *Staphylococcus aureus* infection caused by a particular strain, we ended up with the same infection from another strain. For this reason, the antibiotic therapy may have been wrong.

The next factor was the presence of *Pseudomonas aeruginosa* and *Proteus vulgaris* in the necrotic area around the wound. We don't know whether or not these bacteria were in the blood. If they were a factor in the septicemia, then chloramphenicol may or may not have been effective against the *Proteus* in this instance. Neither drug would be effective against the *Pseudomonas*. Therefore, we had other organisms here that may have escaped our chemotherapeutic control.

Table 1 shows what may happen to patients who are on "prophylactic" antibiotics. Patients who

TABLE 1

Author	Primary Disease	Incidence of Complicating Infection*	
		Without Antibiotics	With Antibiotics
Weinstein**	Poliomyelitis	6%	22%
Petersdorf <i>et al.</i> ‡	Coma	20%	43%
Weinstein‡	Measles	8%	22%

* Mostly caused by antibiotic-resistant bacteria that are extremely difficult to combat.
** Weinstein, L.: Chemoprophylaxis of infection. ANN. INT. MED., 43:287-298, (Aug.) 1955.
‡ Weinstein, L.: Failure of chemotherapy to prevent bacterial complications of measles. NEW ENGLAND J. MED., 253:679-682, (Oct. 20) 1955.

apparently are infection-free on admission to the hospital develop pneumonia more frequently on antibiotics than do patients who receive no chemotherapy.

At about this time, the patient developed passive congestion of the lungs. There may have been an actual infection in the lung, and it may have been pneumonia as it had been before. Someone has asked whether such an infection could remain latent in the blood for a period as long as two months. Septicemia patients have occasionally had positive bone-marrow cultures after two months of the correct form of treatment. Therefore, it is possible—though unlikely—that the infection could have maintained itself throughout this period in some area such as the reticulo-endothelial system.

I should like to stress one more point about the chemotherapy. As far as I have been able to discover by means of telephone conversations—I haven't seen the patient's chart—the triple chemotherapy (chloramphenicol, erythromycin and novobiocin) extended from July 20 to 29, when the patient died. A total of nine days of chemotherapy,

although there had been some intermittent chemotherapy earlier, is inadequate treatment for septicemia.

There are six possibilities here. The chemotherapy, I believe, may have been too little and too late. The second possibility is the existence of an unknown factor that causes some patients to die despite chemotherapy. Dr. Drevets has examined the staphylococcal septicemias seen here during the past three years, and has discovered that we have lost about 20 per cent of such patients, despite the fact that we treat according to antibiotic sensitivity. We don't know why we lose those patients, and there is the larger problem, in this disease, that many patients die without being diagnosed before autopsy.

The third possibility is that there may be a gram-negative rod in addition to the staphylococcus, and this I think would revive the old-fashioned disease of pyemia with multiple abscesses all over the place. As a fourth possibility, it may be that the patient had endocarditis, and from the staphylococcal endocarditis a septic embolus may have broken off and lodged in the brain. Perhaps the patient also had a cerebral hemorrhage. The fifth possibility is that the patient may have developed meningitis through the same mechanism, and only chloramphenicol gets through into the cerebral spinal fluid. We should, therefore, have depended entirely on the chloramphenicol. The last possibility is that we had a new staphylococcus with different antibiotic sensitivities and were using the wrong drug.

Table 2 shows a list of the drugs that one might use. They are the ones I would recommend, and they are listed in their order of preference. In this patient, erythromycin, novobiocin and Chloromycetin (drugs 2, 3 and 5) were used. Therefore, the drug therapy was good. With enough time, the patient's life might have been saved, if we suppose that he died to staphylococcal septicemia alone.

In summary, this patient probably died of staphylococcal septicemia. He probably had a fair amount of pneumonia. He may have developed renal "abscess" before he died. I think he died of staphylococcal septicemia, and that the chemotherapy was inadequate because of the time factor.

Dr. Frederic W. Stamler, Pathology: There are one or two points, I believe, that we can clarify a bit. Dr. Seeböhm, is it not true that at the time of the first blood culture the organism cultured was resistant to all of the antibiotics the patient was then receiving?

Dr. Paul M. Seeböhm, Internal Medicine: The first culture was on July 11, and contained hemolytic *Staphylococcus aureus* resistant to penicillin, streptomycin and tetracycline, but sensitive to erythromycin, Chloromycetin and Albamycin. The culture taken 10 days later was resistant to the erythromycin plus the other three, but was still sensitive to Chloromycetin and Albamycin. The

answer to the question is that the patient was on streptomycin, penicillin and Achromycin when the first culture was taken. The organism proved to be resistant to all the antibiotics he was taking at that time.

Dr. Flocks: In so far as I could tell from the protocol, the blood culture was taken about 20 days before the patient's death. Weren't 20 days long enough in which to destroy the *Staphylococcus aureus*?

Dr. Smith: The results of sensitivity tests are usually reported three days after the specimens have been submitted.

Dr. Seeböhm: In this instance, the specimens were taken on July 11, the results of the sensitivity tests were reported on July 15, and the patient died on July 29. Thus, he was on antibiotics two weeks.

Dr. Stamler: The other point was that the organism became resistant to erythromycin but remained sensitive to the other two drugs given at that time.

Dr. Smith: I think that the three-drug therapy was started on July 20, and the point that I wanted to make was that the patient could then have had only nine days of chemotherapy.

Dr. Flocks: Do you think that two weeks would have been enough?

Dr. Smith: I think that probably two weeks of chemotherapy would have been enough, but that nine days might not have been.

Dr. Seeböhm: I think it is important to note that he was started on erythromycin, the antibiotic to which the organism was sensitive, when the first

TABLE 2

Penicillin*	By far the best drug, if the strain is sensitive
Streptomycin*	Treat with early high doses (4 Gm/day in adults)
Erythromycin**	Propional ester preferred (Ilosone®)
Novobiocin (Cathomycin®, Albamycin®)	15-20% of patients develop a rash
Kanamycin (Kantrex®)	Intramuscularly, but watch for deafness
Chloramphenicol (Chloromycetin®)	For life-threatening infections
Tetracycline	
Tri-acetyl oleandomycin	Reserve for erythromycin-resistant strains
Ristocetin* (Spontin®)	Intravenously only
Vancomycin* (Vancocin®)	Reserve for problems
Sulfadiazine	Ineffective in the presence of pus
Nitrofurantain (Furadantin®)	Only for urinary infections
Bacitracin*†	For local use only
Neomycin*	For local use only
Furazone (Furacine®)	For local use only
Carbomycin	Not recommended
Spiramycin	Not recommended

* Bactericidal.
** Bactericidal in 2 Gm./day dose.
† Occasionally useful in serious systemic infection.

blood culture was found to be positive. It was about July 12, and then he was changed over on July 20 to these other drugs.

Dr. Smith: Is it correct that he had another blood culture that was resistant to erythromycin?

Dr. Seebohm: Yes, later.

Dr. O. Beasley, Internal Medicine: Dr. Smith, are you willing to ascribe the patient's tremendous drop in hemoglobin to his septicemia?

Dr. Smith: Yes, the first drop down to 9 Gm. per 100 cc. was a degree of fall which is very common in staphylococcal septicemia. We recently reviewed 300 cases, and I don't recall that the hemoglobin very often was below 8 Gm. This 5 Gm. surprises me. I doubt whether that would be caused by the septicemia alone.

Dr. Raymond F. Sheets, Internal Medicine: Why does it drop like that?

Dr. Smith: Well, I don't think we know. Could the hematologist help me on this? I think this is a thing that should be studied with the Ashby technic to measure the length of life of the red blood cell.

Dr. Sheets: We think they hemolyze.

Dr. Perret: Was there any drop in the blood pressure?

Dr. Smith: No, just the fall in hemoglobin and red cell count. This fall was not associated with any shock. We usually see shock in gram-negative infections, but not in gram-positive ones.

Dr. Perret: You have evidence here of a blood pressure drop during the anesthetic?

Dr. Smith: The patient was definitely in shock at the time of the operation, but I don't think that the staphylococcus alone could have been responsible, as far as I know.

Dr. W. K. Hamilton, Anesthesiology: There was a misadventure earlier in the course of this patient's operation which involved his getting a low tension of oxygen and a high tension of nitrous oxide. This was a severe hypoxic episode from which he apparently recovered. This hypotensive episode occurred three hours later. Whether they were related, I don't know.

Dr. Stamler: It certainly couldn't account for the great drop in hemoglobin level. We'd like to know whether there was a hemolytic episode at this time.

Dr. Flocks: Dr. Smith, do you know whether the introduction of organisms into the blood stream such as we sometimes see in transurethral resection may produce a severe drop in blood pressure? Couldn't this have happened in this patient at the time of the lymph node dissection, and caused the drop in blood pressure?

Dr. Smith: I believe that shock from infection is quite possible, but I don't think that it would be due to staphylococci. In going over 338 cases, we found only three cases in which death occurred within 24 hours. Sudden death doesn't result from staphylococcal infection; rather, the patient dies in

four or five days. Certainly you can get shock from the introduction of organisms, but again I think that they are usually gram-negative. This man also had *Proteus* and *Pseudomonas*, and he may well have had shock from them.

Dr. Flocks: But do you get shock with gram-negative organisms?

Dr. Smith: Yes.

Dr. Stamler: Bacterial infection would nicely explain the persistent shock that was such a troublesome problem at that time, if we were to accept the thesis of certain investigators who attribute shock to that phenomenon.

Dr. Fernando Aleu, Pathology: In general, the main autopsy findings coincide with Dr. Smith's predictions. The aortic valve was the site of a very severe inflammatory process characterized by the presence of verrucae, ulcers and perforation of one of the cusps. There was no evidence of preexisting abnormalities of the valve. *Staphylococcus aureus* was cultured from valvular tissue.

There were also numerous petechiae in the chest and upper abdominal wall—findings often encountered in areas of acute bacterial endocarditis.

The valvular lesions were too severe to coexist with normal hemodynamics, and as a result, congestive heart failure developed. This was evidenced by the presence of severe edema in both lungs, bilateral pleural effusions and a mild ascites. Septic infarcts of recent occurrence were found in the left kidney and spleen, and there was a large area of encephalomalacia in the right parietal lobe. Cultures obtained from the latter were reported as negative.

There was no evidence of neoplastic disease, either residual or metastatic. The surgical incision at the site of the right inguinal dissection was infected, and a large abscess was found in the right scrotal sac.

The penile neoplasm was moderately well differentiated epidermoid carcinoma. It exhibited a moderate invasiveness. The constituent cells were rather pleomorphic and hyperchromic, and abnormal mitotic figures were seen in numerous instances.

In the inguinal node, the architecture was partially obliterated by nests of malignant, metastatic squamous cells similar to the ones previously described. There seemed to be somewhat more mature cells, with a few islands of keratinizing debris.

The right testicle showed an extensive inflammatory process, with abscess formation associated with a diffuse cellular infiltration and hemorrhage. This extended throughout the tubular and interstitial structures. Also, there was early thrombus formation in some of the veins.

Grossly, the heart manifested an inflammatory process partially destroying the aortic valve and perforating one of the cusps. A large blood clot was attached to the aortic valve.

The valvular structures were edematous, and

were covered by large masses of fibrin in which numerous clumps of bacteria were to be seen admixed with inflammatory cells and erythrocytes. At high power, the bacteria were identified as gram-positive cocci.

The kidney showed an extensive necrotic process almost surrounded by a hyperemic hallow. The glomeruli were acellular, and the tubular epithelium had undergone necrotic changes too. Some of the tubular lumina contained necrotic debris scattered throughout with numerous clumps of bacteria.

The right parietal lobe of the brain showed an area of infarction with proliferating astrocytes, immature capillaries and proliferation of fibroblast from the adventitiae of some of the blood vessels. Neutrophils were scanty. It was difficult to evaluate the age of this lesion with certainty, but it would be somewhere between two and three weeks.

The lung showed severe pulmonary edema. The alveoli contained a homogenous eosinophilic staining precipitate, the alveolar walls were somewhat thickened, and in some instances small nests of pigment-filled macrophages were seen adjacent to them.

Student: Did the lungs contain any pneumonia or emboli?

Dr. Aleu: No, there was no evidence of pneumonia or emboli in the lungs.

Dr. Smith: This was a pure culture of staphylococcus? There was no gram-negative rod anywhere?

Dr. Aleu: We cultured staphylococcus plus *Pseudomonas aeruginosa* from the aortic valve. Other organs yielded *Proteus vulgaris*.

Dr. Flocks: Internal organs or kidneys?

Dr. Aleu: Kidneys.

Dr. Stamler: We still have before us a number of questions relating to infections and their control by antibiotic drugs. I should like to call on Dr. Kallio to discuss this problem from the microbiologist's point of view.

Dr. R. E. Kallio, Bacteriology: Invariably at these conferences, I am left to answer questions in the category of "Where are the snows of yester year?" "What is life?" and "Why didn't this antibiotic work?" I shall do my best to point out a few things that may be germane in this particular connection.

Dr. Smith has already mentioned to you that organisms occasionally become resistant to antibiotics, though the phenomenon is not so common in cases of this sort as is supposed. The area of discussion is very large, and I don't intend to go into it here except to point out to you that the mechanisms by which various organisms become resistant to different antibiotics differ, one from another, and there is a genetic as well as a physiologic background as far as the bacterium is concerned.

In order to avoid having to talk about a very large subject in a short length of time, I have prepared several hundred copies of some selected readings on bacteria resistant to drugs. Most of these are reviews—reasonably recent ones—and I think that some of them are quite good. The best papers are those by Jawetz* and by Maxwell Finland,** and I'd be pleased if those of you who are interested would help yourselves to them as you leave.

One of the central problems which apparently has arisen during the course of this presentation relates to the discrepancy between *in vivo* and *in vitro* activity of the antibiotics. There are a number of things which I think ought to be considered here, but whether or not any of them is the answer to your question, I'll leave to cooler heads than mine.

The evidence from a microbiological point of view is very scant. We have only a couple of cultures, and these came relatively late in the game. One of the first things we might consider, I think, is the fact that sometimes these drugs are converted in the body, and this is especially true in various incompatible combinations, as Dr. Smith has already pointed out. It is important to note, moreover, that many antibiotics are not bactericidal but are bacteriostatic, in which case the antibiotic, unaided, cannot rid the body of the microorganisms. Occasionally, there have been reports that antibiotic therapy administered too early cut short the immune response which, in the final analysis, rids the body of the microorganisms. Apparently, this is not involved in the case under discussion here.

There are a number of reactions which we call immunologic and which occur in response to invasion by microorganisms. These aren't always good, insofar as the host is concerned. For example, chronic inflammatory and fibrotic processes in the body may harbor organisms in places that are inaccessible to the antibiotics. Such might easily have been the situation in this instance, I think, where there was very clear-cut evidence for endocarditis. If so, there would be a considerable number of organisms, possibly, forming a focus of infection beyond the reach of the antibiotic. Some of the basis for combining cortisone treatment with antibiotic therapy is the desire to suppress the inflammatory response, thereby reducing

* Jawetz, E.: Antimicrobial chemotherapy. *ANN. REV. MICROBIOL.*, **10**:85-114, 1956.

** Jones, W. F., Jr., and Finland, M.: Antibiotic combinations: antistreptococcal and antistaphylococcal activity of plasma of normal subjects after ingestion of erythromycin or penicillin or both. *NEW ENGLAND J. MED.*, **255**:1019-1024, (Nov. 29) 1956.

Jones, W. F., Jr., and Finland, M.: Antibiotic combinations: antistreptococcal and antistaphylococcal activity of plasma of normal subjects after oral doses of penicillin, oleandomycin and combinations of these antibiotics. *NEW ENGLAND J. MED.*, **256**:115-119, (Jan. 17) 1957.

Jones, W. F., Jr., and Finland, M.: Antibiotic combinations: antistreptococcal and antistaphylococcal activity of normal subjects after ingestion of erythromycin or chloramphenicol or both. *NEW ENGLAND J. MED.*, **257**:744-748, (Oct. 17) 1957.

the number of ecological niches in which the micro-organism might avoid contact with antibiotics.

Finally and rather briefly, though I don't want in insult anyone's intelligence, I should like to review the technic by which the sensitivity test is carried out in bacteriologic laboratories. Actually, there are two principal methods. In one of them, a dilution of the antibiotic is put into tubes, and the tubes are then seeded with the organism in question. The other and more common procedure is to use an agar plate in which there is a reservoir of the antibiotic, either in a cylinder (the older method) or in a little paper disc which has been impregnated with a certain amount of the antibiotic. This plate has previously been heavily seeded or streaked over its entire surface with the organism in question. Then resistance or sensitivity is read off by the clear area (the area containing no growth on the agar plate). This is a very simple test, one that is common in bacteriologic laboratories over the entire country, and it is the basis for what we talk about as resistance or susceptibility in the reports that are sent back to the hospital.

Now, let's talk about the interpretation of that test. There are a number of things that this test does not tell us, but which sometimes are erroneously inferred from the results. In the first place, this kind of test, performed on the plate with antibiotics diffusing into the agar, tells us nothing much about the distribution of drug-resistant individuals in the population. It gives us only a minimum inhibitory concentration of the antibiotic, and it doesn't tell us whether the antibiotic is bacteriostatic or bactericidal, though sometimes that is very important to know. Finally, it tells us very little about drug combinations. Many drug combinations appear to work very well *in vitro* but are virtually valueless *in vivo*, for reasons which we do not know.

The final point which I should like briefly to raise in answer to the questions that have been asked here is whether or not the hemolytic *Staphylococcus aureus* which has been so important in this case might have changed. You will recall that the first culture was susceptible to Chloromycetin, Albamycin and erythromycin. Subsequent cultures showed that the *Staphylococcus aureus* was resistant to erythromycin but was still susceptible to the first two, Chloromycetin and Albamycin. I think it is entirely possible that the explanation is to be found in what is referred to as "superinfection," i.e., the replacement of the first organism by another. Of course the evidence is much too scanty to let us draw a conclusion on this basis alone, but superinfection isn't uncommon in cases of this kind. Jawetz has recently reviewed the literature, and he finds that superinfection by what is commonly referred to as "hospital staph." is especially common in young children undergoing treatment with broad-spectrum antibiotics. In view of the fact that

physiological and anatomical abnormalities tend to favor superinfection, this is not surprising. Furthermore, it shouldn't astound us to find that the second largest area of superinfection appears to be in urinary-tract infection, and in urogenital-tract infections of the kind we have under consideration today.

Dr. Stamler: Reverting to the original problem that our patient presented, I should like to ask Dr. Flocks to comment upon the predisposing factors in carcinoma of the penis.

Dr. Flocks: Penile cancer is very rare in this country. It is relatively rare among people who have been circumcised before the age of 20. It is rare among Moslems. It is rare among Jews. In India, the most common cancer in the male is cancer of the penis, but it is interesting to note that, practically speaking, it rarely occurs among the Moslems of India. It is the most common cancer among the Hindus, who ordinarily aren't circumcised.

The way in which the redundant foreskin produces the carcinoma (if it does produce it) is not clear, as I have indicated before. The association, however, is very, very striking and very interesting. Something extraordinary happened during World War II. When Iowans and Minnesotans were taken down to the desert near Palm Springs for training in desert warfare, a great many of them developed what we call venereal warts. Actually, these are wart-like tumors that grow under the foreskin and are supposed to be due to a viral infection. They are definitely precancerous, and probably the commonest operation on the soldiers in Palm Springs was circumcision to prevent the occurrence of so-called venereal warts. This evidence would seem to indicate that a virus is an important factor in this particular carcinoma.

Another interesting question has been raised regarding the possibility of a relationship between lack of circumcision in the male and carcinoma of the cervix in the female. Perhaps Dr. Keettel will discuss this aspect of the cancer problem very briefly.

Dr. W. C. Keettel, Obstetrics and Gynecology: It is commonly said that for every case of endometrial carcinoma that is treated, one will diagnose eight new cases of cervical carcinoma. However, recent statistics seem to indicate that this ratio is not so high as was once reported.

Since this ratio is reversed among Jews and in celibate women, it is interesting to speculate about the etiology of cervical malignancy. In Jewish and Moslem women, the incidence of cervical carcinoma is very low, but the numbers of endometrial carcinomas are not changed. These findings would seem to indicate that there is a relationship between intercourse, circumcision and cervical cancer, and it would appear that smegma was perhaps of etiological significance.

A Canadian investigator has studied the relation-

ship between sexual intercourse and cervical cancer in a different manner. Gannon observed a group of nuns over a period of 20 years—about 13,000 women per year. Not a single case of cervical cancer was found in this group of celibate women. During the same period, there were a number of endometrial carcinomas that were diagnosed and treated. Dr. Janet Towne, in this country, has reported on a group of nuns that she studied. She reported several cases of cervical carcinoma, but found that the incidence of endometrial carcinoma was much higher than the incidence of cervical carcinoma.

These data would seem to indicate that intercourse and intercourse with an uncircumcised male have a bearing upon the incidence of cervical carcinoma. Dr. Flocks has pointed out that a similar relationship exists in the male concerning carcinoma of the penis. It would seem, then, that there is a definite relationship between smegma and the development of cervical and penial carcinoma. Several projects are now in progress that may reveal the effects of smegma as a carcinogenic agent.

SUMMARY OF NECROPSY FINDINGS

The most significant autopsy finding was an acute bacterial endocarditis involving the mitral and aortic valves, with perforation of the latter. This resulted in cardiac failure, as evidenced by

the presence of pleural effusion, pulmonary edema and visceral congestion. Associated septic infarcts in the spleen, left kidney and right cerebrum were also present.

Although hemolytic *Staphylococcus aureus* was cultured from the blood during life, the organism was not obtained from postmortem blood or tissues. However, in the valvular verrucae and in the infarcted areas, there were numerous basophilic-staining cocci that were consistent with hemolytic *Staphylococcus aureus*. The inguinal surgical incision was infected, and a scrotal abscess was present in the right side. No residual neoplasm was found.

Death was due to congestive heart failure secondary to an acute bacterial endocarditis.

ANATOMICAL DIAGNOSES

1. Acute bacterial endocarditis with rupture of the aortic valve
2. Congestive heart failure with:
Pulmonary edema
Pleural effusion
Passive congestion, liver
3. Septic infarcts in left kidney, spleen and right parietal lobe
4. Radial node dissection, right inguinal, post-operative, with wound infection and scrotal abscess.

Coming Meetings

In State

Apr. 1-3	Middle States Public Health Association. Hotel Savery, Des Moines
Apr. 8	Annual Meeting, Trudeau Society. Hotel Savery, Des Moines
Apr. 8-9	Cardiac Auscultation. University Hospitals, Iowa City
Apr. 19-22	Annual Meeting, Iowa State Medical Society. Veterans Memorial Auditorium, Des Moines
Apr. 24-26	First Midwestern Sectional Meeting, Biological Photographic Association. University of Iowa, Iowa City
May 13	Symposium on General Medicine (Iowa Academy of General Practice and Lederle Laboratories). Fort Des Moines Hotel, Des Moines

Out of State

Apr. 1-3	American Association of Anatomists. Seattle
Apr. 1-4	Neurosurgical Society of America. The Homestead, Hot Springs, Virginia
Apr. 1-4	Western Conference on Anesthesiology (Biennial). Westward Ho Hotel, Phoenix
Apr. 2-3	Fifth Annual Western Regional Meeting, American Group Psychotherapy Association. Sheraton-Palace Hotel, San Francisco
Apr. 2-4	California TB and Health Association and California Trudeau Society Annual Meeting. Villa Motor Hotel, San Mateo
Apr. 2-4	Emergency Surgery for General Physicians. University of Minnesota, Minneapolis
Apr. 2-4	Enzymes—Basic and Clinical Aspects. University of California, San Francisco

Apr. 2-4	Problems of the Newborn Period. University of Wisconsin Medical School, Madison
Apr. 2-4	Sixteenth Annual Meeting, Association of American Physicians and Surgeons. Fort Worth, Texas
Apr. 2-4	Surgery of Hernia. Cook County Graduate School of Medicine, Chicago
Apr. 2-4	North Pacific Society of Neurology & Psychiatry. Gearhart, Ore.
Apr. 2-4	Practice of Global Medicine in the United States (American College of Physicians). Cornell University Medical College, New York City
Apr. 3-4	Steroids. U.C.L.A., Los Angeles
Apr. 3-5	American Society for the Study of Sterility. Shelburne Hotel, Atlantic City, N. J.
Apr. 4-5	AMA Regional Medicolegal Conference. Hotel Cleveland, Cleveland
Apr. 5-8	Missouri State Medical Association. Kansas City, Missouri
Apr. 5-9	Eleventh Annual Convention, International Academy of Proctology. The Plaza, New York City
Apr. 5-12	Seventh Annual Interim Scientific Meeting, Phi Lambda Kappa (for General Practitioners). Deauville Hotel, Miami Beach
Apr. 6-8	Annual Meeting, American College of Obstetricians & Gynecologists. Convention Hall, Atlantic City, N. J.
Apr. 6-8	American Radium Society. The Homestead, Hot Springs, Virginia
Apr. 6-8	Radiology for General Physicians. University of Minnesota, Minneapolis
Apr. 6-8	Symposium on Otolaryngology. University of Kansas School of Medicine, Kansas City, Kansas

- Apr. 6-9 **Eleventh Annual Scientific Assembly, American Academy of General Practice.** Civic Auditorium, San Francisco
- Apr. 6-9 **Sectional Meeting, American College of Surgeons.** Queen Elizabeth & Sheraton-Mount Royal Hotels, Montreal, Quebec, Canada
- Apr. 6-10 **Course for Physicians in General Practice.** University of California, San Francisco
- Apr. 6-10 **Surgery of the Colon and Rectum.** Cook County Graduate School of Medicine, Chicago
- Apr. 6-17 **American Board Review Course in Surgery.** Cook County Graduate School of Medicine, Chicago
- Apr. 7 **Los Angeles County Heart Association Workshop on Work Simplification Techniques for Physicians, Nurses, Occupational Therapists, Physical Therapists, Dietitians, Social Workers.** Southern California Gas Co., Los Angeles
- Apr. 8 **Anesthesia for the Part-time Anesthetist.** University of Oklahoma Medical Center, Oklahoma City
- Apr. 8-9 **Second National Symposium, Technology of Germfree Research.** Lubund Institute, University of Notre Dame, South Bend, Indiana
- Apr. 8-10 **Symposium on Ophthalmology.** University of Kansas School of Medicine, Kansas City, Kansas
- Apr. 9-11 **Mid-Central States Orthopaedic Society.** Town House, Omaha.
- Apr. 10-11 **The Vagina (New York Academy of Sciences).** Barbizon Plaza, New York City
- Apr. 10-11 **Treatment of Athletic Injuries (Regional Committee on Trauma of the American College of Surgeons).** University of Oklahoma Medical Center, Oklahoma City
- Apr. 12-13 **American Society for Artificial Internal Organs.** Shelburne Hotel, Atlantic City, N. J.
- Apr. 12-15 **Tennessee State Medical Association.** Peabody Hotel, Memphis
- Apr. 12-15 **Practical Rehabilitation Procedures for the Internist (American College of Physicians).** NYU-Bellevue Institute of Physical Medicine & Rehabilitation, New York City
- Apr. 12-15 **Association of Bone & Joint Surgeons.** Statler Hotel, Washington, D. C.
- Apr. 12-16 **American Physiological Society.** Atlantic City
- Apr. 13-14 **Pediatrics (University of Nebraska College of Medicine and Division of Maternal and Child Health, Nebraska State Health Department).** University of Nebraska College of Medicine, Omaha
- Apr. 13-15 **American Academy of Pediatrics (Spring Session).** Sheraton Palace Hotel, San Francisco
- Apr. 13-15 **Arkansas Medical Society.** Goldman Hotel, Fort Smith
- Apr. 13-15 **Clinical Reviews (Mayo Clinic and the Faculty of the Mayo Foundation for Medical Education & Research).** Mayo Clinic, Rochester, Minnesota
- Apr. 13-15 **Symposium on Anesthesiology.** University of Kansas School of Medicine, Kansas City, Kansas
- Apr. 13-17 **American Association of Immunologists.** Atlantic City, N. J.
- Apr. 13-17 **American Society for Pharmacology and Experimental Therapeutics.** Atlantic City, N. J.
- Apr. 13-18 **American Academy of Neurology.** Statler Hotel, Los Angeles
- Apr. 13-18 **American Society for Experimental Pathology.** Atlantic City, N. J.
- Apr. 13-18 **American Society of Biological Chemists.** Atlantic City, N. J.
- Apr. 14-16 **Postgraduate Conference (Creighton University School of Medicine).** Creighton Memorial-St. Joseph's Hospital, Omaha
- Apr. 15-17 **American Association of Genito-Urinary Surgeons.** Seaview Country Club, Absecon, N. J.
- Apr. 15-17 **American Surgical Association.** Fairmont Hotel, San Francisco
- Apr. 15-17 **Medical and Chirurgical Faculty of the State of Maryland.** The Alcazar Hotel, Baltimore
- Apr. 15-17 **National Committee on the Aging (National Social Welfare Assembly).** Statler Hotel, St. Louis
- Apr. 15-17 **Seventh Annual Spring Postgraduate Assembly and Poynter Lectures.** University of Nebraska College of Medicine, Omaha
- Apr. 15-18 **Third Annual Postgraduate Course on Fractures and Other Trauma (Chicago Committee on Trauma, American College of Surgeons).** John B. Murphy Memorial Auditorium, Chicago.
- Apr. 16-17 **Obstetrics & Gynecology.** Boston Lying-in Hospital, Boston
- Apr. 16-18 **Allergy for General Physicians and Specialists.** University of Minnesota, Minneapolis
- Apr. 16-18 **American Association of Railway Surgeons.** Drake Hotel, Chicago
- Apr. 18-19 **AMA Regional Medicolegal Conference.** Hotel Utah, Salt Lake City
- Apr. 18-19 **Second International Symposium on Myasthenia Gravis (The Myasthenia Gravis Foundation, Inc., and The National Institute of Neurological Diseases and Blindness).** Statler-Hilton Hotel, Los Angeles
- Apr. 18-21 **Texas Medical Association.** San Antonio
- Apr. 19 **Third Annual Meeting, American Society of Internal Medicine.** Conrad Hilton Hotel, Chicago
- Apr. 19-22 **Oklahoma State Medical Association.** Mayo Hotel, Tulsa
- Apr. 20-23 **American Urological Association.** Chalfonte-Haddon Hall, Atlantic City, N. J.
- Apr. 20-23 **Congress of International Anesthesia Research Society.** Miami, Florida
- Apr. 20-24 **American College of Physicians.** Conrad Hilton Hotel, Chicago
- Apr. 20-24 **American Board Review Course in Medicine.** Cook County Graduate School of Medicine, Chicago
- Apr. 21-23 **American Association for Thoracic Surgery.** Statler Hotel, Los Angeles
- Apr. 23-24 **Eastern States Health Education Conference.** New York Academy of Medicine, New York City
- Apr. 23-25 **American Association of Pathologists and Bacteriologists.** Somerset Hotel, Boston
- Apr. 23-25 **Association of Surgeons of Great Britain and Ireland.** London
- Apr. 23-25 **Annual Meeting, Hawaii Medical Association.** Hilo
- Apr. 23-25 **Annual Meeting, Southern Society of Anesthesiologists.** Dinkler-Tutwiler Hotel, Birmingham
- Apr. 24-27 **American Psychoanalytic Association.** Hotel Sheraton, Philadelphia.
- Apr. 25-26 **Academy of Psychoanalysis.** Philadelphia
- Apr. 25-29 **Medical Society of New Jersey.** Chalfonte-Haddon Hall, Atlantic City, N. J.
- Apr. 26-28 **Southwest Allergy Forum.** Shamrock-Hilton Hotel, Houston
- Apr. 26-29 **Industrial Medical Association.** Sherman Hotel, Chicago
- Apr. 27-28 **Society of Neurological Surgeons.** Waldorf-Astoria Hotel, New York City
- Apr. 27-28 **Tenth Annual Symposium on Recent Advances in the Study of Venereal Diseases (American Venereal Disease Association and the Public Health Service).** Johns Hopkins University, Baltimore, Maryland
- Apr. 27-28 **Annual Meeting, American Venereal Disease Association, and Tenth Annual Symposium on Venereal Diseases, U.S.P.H.S.** Johns Hopkins Hospital, Baltimore
- Apr. 27-29 **Thirtieth Annual Meeting, Aero Medical Association.** Statler Hotel, Los Angeles
- Apr. 27-30 **Ninety-first Annual Session, Nebraska State Medical Association.** Hotel Paxton, Omaha
- Apr. 27-May 1 **Allied Health Course and Workshop in Head Nursing.** University of Kansas School of Medicine, Kansas City, Kansas

- Apr. 27-May 1 **American Psychiatric Association.** Civic Auditorium, Philadelphia
- Apr. 27-May 1 **Preclinical Course in Radioisotope Methodology.** Oak Ridge Institute of Nuclear Studies, Oak Ridge, Tennessee
- Apr. 27-May 8 **Diagnostic X-Ray.** Cook County Graduate School of Medicine, Chicago
- Apr. 27-May 8 **Surgical Technic.** Cook County Graduate School of Medicine, Chicago
- Apr. 27-May 15 **Nursing in Rehabilitation.** University of California, San Francisco
- Apr. 28-30 **Connecticut State Medical Association.** Hamden High School, Hamden
- Apr. 28-May 2 **Arizona Medical Association.** San Marcos Hotel, Chandler
- Apr. 30-May 2 **American Association for Cleft Palate Rehabilitation.** Sheraton Club, Absecon, N. J.
- Apr. 30-May 2 **Annual Meeting, American Goiter Association.** Drake Hotel, Chicago
- Apr. 30-May 3 **Student American Medical Association.** Morrison Hotel, Chicago
- Apr. 30-May 4 **American Association for the Study of Neoplastic Diseases.** Hotel Greystone, Gatlinburg, Tennessee
- May 1-3 **International Symposium on Prevention of Bacterial Resistance to Antibiotics.** Perugia, Italy
- May 2-3 **Sixteenth Annual Meeting, American Psychosomatic Society.** Chalfonte-Haddon Hall, Atlantic City
- May 2-5 **North Dakota Medical Association.** Prince Hotel, Bismarck
- May 2-6 **Florida Medical Association.** Americana Hotel, Miami Beach
- May 2-9 **Conference on International Union for Health Education of the Public.** Dusseldorf, Germany
- May 2-12 **Mediclinics of Minnesota.** Fort Lauderdale, Florida
- May 3 **American Federation for Clinical Research.** Chalfonte-Haddon Hall, Atlantic City
- May 3-4 **American Society for Clinical Investigation.** Haddon Hall, Atlantic City
- May 3-6 **Medical Society of the State of North Carolina.** George Vanderbilt Hotel, Asheville
- May 3-7 **Kansas Medical Society.** Jayhawk Hotel, Topeka
- May 3-7 **Pacific Coast Oto-Ophthalmological Society.** Hotel Riviera, Las Vegas
- May 4-6 **Louisiana State Medical Society.** Roosevelt Hotel, New Orleans
- May 4-8 **Breast & Thyroid Surgery.** Cook County Graduate School of Medicine, Chicago
- May 4-8 **Histopathology.** N.Y.U., New York City
- May 4-8 **Ophthalmoscopy.** N.Y.U., New York City
- May 4-15 **Clinical Uses of Radioisotopes.** Cook County Graduate School of Medicine, Chicago
- May 4-15 **General and Surgical Obstetrics.** Cook County Graduate School of Medicine, Chicago
- May 5 **Anesthesiology.** University of Nebraska College of Medicine, Omaha
- May 5-6 **Association of American Physicians.** Haddon Hall, Atlantic City
- May 5-7 **New Mexico Medical Society.** Mission Motel, Las Cruces
- May 5-7 **State Medical Society of Wisconsin.** Hotel Schroeder, Milwaukee
- May 6 **Fourth Annual Trauma Day.** University of Nebraska College of Medicine, Omaha
- May 6-8 **American Pediatric Society.** The Inn, Buck Hill Falls, Penna.
- May 6-10 **Second Annual Congress on Infectious Pathology.** Milan
- May 8-9 **Thyroid Diseases (Fifth Annual Surgery, Radiology and Pathology Symposium).** University of Oklahoma Medical Center, Oklahoma City
- May 8-9 **Society for Pediatric Research.** The Inn, Buck Hill Falls, Penna.
- May 9-15 **Medical Society of the State of New York.** Hotel Statler, Buffalo
- May 10-12 **Washington Academy of General Practice.** Longview, Washington
- May 10-14 **American Society of Maxillofacial Surgeons.** Palmer House, Chicago
- May 10-15 **Society of American Bacteriologists.** Sheraton Jefferson Hotel, St. Louis
- May 11-13 **Physical Medicine.** University of Colorado Medical Center, Denver
- May 11-15 **Introduction to Electrocardiography for General Physicians.** University of Minnesota Center for Continuation Study, Minneapolis
- May 11-22 **Board of Surgery Review Course (Part II).** Cook County Graduate School of Medicine, Chicago
- May 11-22 **Intensive Course in Medicine.** Cook County Graduate School of Medicine, Chicago
- May 12-13 **Rhode Island Medical Society.** Providence
- May 12-14 **Mississippi State Medical Association.** Hotel Buena Vista, Biloxi
- May 12-14 **South Carolina Medical Association.** Columbia Hotel, Columbia
- May 12-15 **Femoral Arteriography.** Cook County Graduate School of Medicine, Chicago
- May 13 **Antimicrobial Therapy and the Treatment of Infectious Diseases of Childhood.** University of Oklahoma Medical Center, Oklahoma City
- May 14-16 **Neurology.** University of Colorado Medical Center, Denver
- May 15-16 **Ear-Nose-Throat.** University of California, San Francisco
- May 17-20 **Medical Association of Georgia.** Bon Air Hotel, Augusta
- May 18-21 **Symposium on Surgery.** University of Kansas Medical Center, Kansas City, Kansas
- May 18-22 **Proctology for General Physicians.** University of Minnesota Center for Continuation Study, Minneapolis
- May 18-22 **Symposium on Dermatology and Syphilology for Dermatologists.** N.Y.U., New York City
- May 19-21 **Massachusetts Medical Society.** Hotel Statler, Boston
- May 19-22 **Illinois State Medical Society.** Hotel Sherman, Chicago
- May 19-23 **American Association on Mental Deficiency.** Hotel Schroeder, Milwaukee
- May 20-22 **Ogden Surgical Society.** Ogden, Utah
- May 21-23 **American Association for the History of Medicine.** Wade Park Manor, Cleveland
- May 21-23 **Annual Meeting, Nevada Academy of General Practice.** Riverside Hotel, Reno
- May 21-23 **Third Annual Postgraduate Course in Geriatric Medicine (Washington U. Medical School).** St. Louis
- May 22-24 **Cardiac Arrhythmias (American College of Physicians).** Philadelphia General Hospital, Philadelphia
- May 22-24 **Annual Meeting and Scientific Session, California Heart Association.** Lafayette Hotel, Long Beach
- May 24-29 **National Tuberculosis Association.** Palmer House, Chicago
- May 25-27 **American Gynecological Society.** The Homestead, Hot Springs, Virginia
- May 25-27 **American Trudeau Society.** Palmer House, Chicago
- May 25-27 **Minnesota State Medical Association.** Duluth
- May 25-29 **Board of Internal Medicine Review Course (Part II).** Cook County Graduate School of Medicine, Chicago
- May 25-29 **Eighth Annual Convention, American College of Cardiology.** Benjamin Franklin Hotel, Philadelphia
- May 25-29 **General Surgery.** Cook County Graduate School of Medicine, Chicago
- May 25-29 **Hematology.** Cook County Graduate School of Medicine, Chicago
- May 25-29 **Pediatric Advances (Children's Hospital of Philadelphia and Graduate School of Medicine of the University of Pennsylvania).** Philadelphia
- May 27-29 **Otolaryngology for Specialists.** University of Minnesota Center for Continuation Study, Minneapolis
- May 28-30 **American Ophthalmological Society.** The Homestead, Hot Springs, Virginia
- May 30-June 1 **First International Congress on Irradiation of Endocrine Glands.** Amsterdam, Holland



ANNUAL UNIVERSITY ISSUE

The editors of the JOURNAL, this month, are proud to present their annual issue for which all scientific articles are contributions from the faculty members of the State University of Iowa College of Medicine. Physicians throughout the state, whether alumni of S.U.I. or not, take constant satisfaction from the position of leadership that their University's teachers and scientific investigators occupy in every area of American medicine, and cannot fail to be pleased at this evidence of continued cooperation between their State Medical Society and the dean and faculty of the College.

Rehabilitation has been chosen as the theme for the papers that make up this year's University Issue, and the choice is a happy one. Throughout the country, efforts are being stepped up to return handicapped people to useful, satisfying activity, and as usual the S.U.I. College of Medicine has taken the lead, in so far as Iowa is concerned.

From the presentations in this University Issue, representing work in physical medicine, neurology, ophthalmology, otology and vocational reeducation, each reader of the JOURNAL can acquaint himself with the ramifications of the problem that is being attacked. When physicians gather in Des Moines, later this month, for the ISMS Annual Meeting, they will want to take time to visit the newly opened Younker Rehabilitation Unit at Iowa Methodist Hospital to examine the facilities available there, and on their next trip to Iowa City they should review the set up at S.U.I.

Praise is due the faculty of the S.U.I. College of Medicine for continuing to keep the physicians of Iowa informed about the rapid advancements that are being made in medical science, and special thanks go to the committee headed by Dr. David Culp for its diligence in choosing and presenting so timely a subject this year.

NEW YORK BLUE SHIELD PLAN FOR THE ELDERLY

The Western New York Medical Plan, Inc. (Blue Shield) has made benefits available on an individual subscription basis to people over age 65, at full service for an individual whose annual income does not exceed \$4,000 and for families with annual incomes not in excess of \$6,000. Rates are the same as those for other non-group subscribers.

SENATOR PRAISES IOWA PLAN

Addressing the United States Senate on March 2, Hon. Bourke B. Hickenlooper praised the Blue Shield plans for full-service to the over-65 group and to families with incomes up to \$5,400, which the ISMS House of Delegates had authorized at its special meeting in Des Moines on February 22.

Senator Hickenlooper said, "I congratulate the Iowa physicians for these progressive and positive actions. . . . It is my view that local programs of this kind, wherein all medical groups participate, will prevent the growth of government-dominated medicine."

On the same day, Senator Hickenlooper and Representative Merwin Coad (D., Ia.) read the following DES MOINES REGISTER editorial into the CONGRESSIONAL RECORD:

MEDICAL CARE FOR THE AGED

The Iowa State Medical Society deserves congratulations for its new program of low cost medical insurance for persons over 65 who find it a hardship to pay medical bills.

The Society is taking the lead in attempting to solve one of the country's most vital health problems. The plan calls for some financial sacrifice on the part of doctors. It's an experiment which, if successful in Iowa, probably would be adopted in many other states.

The plan was approved Sunday at a special meeting of the House of Delegates of the Medical Society. Some details remain to be worked out, but the program is expected to be put into effect by April.

The insurance will be written by Blue Shield, the non-profit insurance plan of the Medical Society, and will be available to persons over 65 years of age. If the combined income of a man and his wife is less than \$3,000 a year, the couple will be entitled to full-service coverage. An individual can qualify if his income is under \$2,000.

The cost to the insured will be about \$2.25 to \$2.75 per person per month. Income from insurance charges would not be sufficient to pay in full the medical fees which doctors ordinarily charge. So the doctors will accept lower fees to be set by Blue Shield. The fees are expected to cover only overhead costs.

Blue Shield is working with Blue Cross to provide insurance which will cover both hospital and doctor expenses for the elderly at a cost of \$6.50 to \$7 a person a month. Blue Cross insurance, sponsored by the Iowa Hospital Association, covers hospital costs.

The elderly, who have retired from jobs that paid them a regular income, have less ability to pay medical and hospital expenses than people of working age. But they are more likely to incur heavy medical expenses. It's tragic if they don't get medical care because they can't afford it or if they are forced to become charity patients.

It is estimated that 210,000 of the 300,000 Iowans over 65 years of age will be eligible to take part in the new Blue Shield program. A high percentage of them now have no protection against heavy medical and hospital costs that may come at any time. A 1957 survey made by the National Opinion Research Center of the University of Chicago showed that nationally five out of every eight persons 65 and over had no health insurance protection.

A nation as prosperous as the United States, with highly skilled medical doctors and splendid hospitals, will not just do nothing about the problem of health care for its senior citizens in low income brackets.

Unless programs of the kind the Iowa Society plans can be made truly effective, the Government will sooner or later take over the problem in response to general public demand. This is what the American Medical Association fears and why it recommended last December that doctors reduce fees to persons over 65 who have low incomes.

The AMA is bitterly opposed to the Forand Bill in Congress. This calls for the Government to provide free hospital, surgical and nursing home insurance for everyone eligible for social security benefits. It would cost \$835 million a year. The AMA fears it would lead to free health care for everyone and Government control of medicine.

The Iowa Society is taking the best way to fight socialized medicine. It recognizes the gravity of the problem of providing health care to the elderly at costs they can afford, and is attempting to do something about this.

When he finished reading that editorial to his fellow senators, Mr. Hickenlooper called attention

to the inaccuracy of the REGISTER's estimate of the services proposed under the Forand Bill. "The sponsor of the Bill," he said, "estimates a more realistic cost of \$2 billion a year."

AMA REGISTRY OF BLOOD DYSCRASIAS

The Subcommittee on Blood Dyscrasias of the AMA Committee on Research has been sponsoring a pilot study of blood dyscrasias in which therapeutic agents are suspected of having been causative, and it has begun issuing semi-annual summaries of its findings in an effort to provide "an early-warning system for the medical profession."

The cases in the Subcommittee's pilot study are ones that have been reported by a selected group of collaborating physicians in the United States and Canada, and ones that have been reported in the literature. It is pointed out that the inclusion of a drug in the list does not necessarily mean that it is harmful or that it certainly was the cause of the reported dyscrasia. Furthermore, the information contained in the semi-annual summaries should not be supposed to possess statistical significance, for only raw data are presented, undoubtedly representing only a small segment of the incidence.

In the future, the Subcommittee would like physicians everywhere to send reports of all cases of blood dyscrasia in which a drug or drugs are suspected of having been the etiologic agent(s), either as letters or on report forms which the AMA will be glad to supply. Letters, inquiries and report forms should be directed to the Committee on Research, American Medical Association, 535 North Dearborn Street, Chicago 10.

The current and subsequent semi-annual summaries can be borrowed from the Iowa State Medical Library, Des Moines 19, or can be secured direct from the AMA.

"THE KANSAS PLAN"

At the Seventeenth National Rural Health Conference, held in Wichita March 5-7, the Kansas Medical Society gave a beautiful demonstration of a way in which group dynamics can be applied to finding and solving local health problems. In actual practice, a team consisting of a moderator and several public health authorities comes into community after community and holds town meetings. In each instance, citizens of the community do most of the talking. They present the problems that are closest to their hearts; they suggest solutions; and—most important—they raise themselves to heights of enthusiasm that promise a determination to make their towns better places in which to live.

Not content merely to describe such meetings, Mr. Oliver E. Ebel, executive secretary of the Kansas Society, set the stage, invited the hundreds of people in attendance at the National Rural Health Conference to pretend that they were townspeople attending a local meeting, and passed the ball to them. "You are all citizens of the town of America, U.S.A.," he told them. "Anybody can obtain the floor to speak to a problem or to offer a possible solution."

For two hours thereafter, problems came thick and fast, ranging from "Our kids spend too many hours on the school bus" to "How do we find out whether our town can support a hospital?" For every problem that was raised, at least five solutions were proposed. The panel of resource persons spoke only when their opinions or stores of data were called for, and the moderator served merely to keep the discussion on the track, sorting and fitting with a deft hand.

Reminiscent of the historic New England town meeting, these Kansas gatherings facilitate exchanges of ideas and help change mere thought into action. The "team" brings in no prefabricated problems and refrains from offering pat solutions to the ones that citizens present. Some of these town meetings have served as a stimulus to the formation of local health councils. Others have had no visible results. But whatever the long-range outcome, any community must be the better for having participated in such a meeting.

EXFOLIATIVE CYTOLOGY

In cooperation with the Iowa State Medical Society and the Iowa Association of Pathologists, the American Cancer Society, Iowa Division, Inc., is about to start a statewide program designed to acquaint adult women with the lifesaving efforts of a diagnostic aid in the detection of cancer of the cervix. Pilot publicity campaigns have already been conducted in Polk and Johnson Counties, and a school for the training of cyto-screeners has been conducted in Des Moines under the direction of Dr. F. C. Coleman.

Iowa physicians are asked to be sure to hear the symposium on exfoliative cytology that is to be a part of the scientific program at the Annual Meeting of the Iowa State Medical Society, at the Veterans Memorial Auditorium in Des Moines, on April 19-22.

Also at the ISMS Annual Meeting, they are urged to visit the scientific-exhibit booth sponsored by the Cancer Society in cooperation with the State Cytology Coordinating Committee, Drs. Kenneth Cross and Richard Birge, co-chairmen. The booth will feature slides, photographs and information concerning the cytology program. Kits and

instruments used in obtaining specimens will also be shown.

This exhibit will be manned by physician members of the State Cytology Coordinating Committee, the Cancer Society's Committee on Professional Information, and a representative of the Department of Gynecology and Obstetrics at the S.U.I. College of Medicine. Visitors to the booth will not be left to learn what they can by themselves, but will have ample opportunities to question the men who have planned this project, and thus can learn in detail what help is being asked from physicians throughout the state.

THE PRESENT STATUS OF BCG VACCINATION

On the one hand, there is a group who assert that there is no proof that BCG vaccine is efficacious, that it may be dangerous, and that the widespread use of BCG may actually do harm by destroying the validity of the tuberculin test as a diagnostic and screening procedure. On the other hand there are some who believe that mass BCG vaccination is both safe and practicable, and could be a major factor in the eventual eradication of tuberculosis. As in many such controversies, it is likely that the truth lies somewhere between these two extremes.

In a carefully controlled experiment, 27,000 tuberculin-negative children were divided at random into two groups.¹ One received BCG vaccine intradermally, and the other was not vaccinated and served as a control. After almost three years, the tuberculosis morbidity in the control group was five times as great as in the vaccinated group. Moreover, six cases of miliary and meningeal tuberculosis developed in the control group, compared to no cases in the vaccinated group.

Another carefully conducted study is that of Aronson and his coworkers among American Indians.^{2,3} One group of 1,551 preschool Indian children received intradermal BCG, and the other group of 1,457 received intradermal saline and served as controls. Twenty years later, over 99 per cent of both groups were followed up, and it was found that the ratio of deaths from tuberculosis of vaccinated to controls was 1:5.2, whereas the ratio of deaths from other causes was approximately 1:1.

Palmer, Shaw and Comstock⁴ have recently reported the results of similarly conducted trials in Puerto Rico and in Muscogee County, Georgia. In Puerto Rico, the tuberculosis case rate was 43 per 100,000 per year among controls, and 30 among vaccinees. The difference was considered statistically significant. In the Muscogee County trial, the corresponding rates were 22 among the controls and 14 among the vaccinees, but this difference was not considered to be statistically significant. The authors estimate that if all the nonreactors

to tuberculin had been vaccinated (instead of only half) the total number of cases would have been reduced by only 8 or 9 per cent.

A striking finding in both studies is that the risk of developing tuberculosis was much greater for those who were tuberculin reactors than for those who were non-reactors. In other words, the cases developing later in life are largely from the pool of those whose tuberculin reactions were positive, and far fewer cases develop among those whose reactions initially were negative. Since BCG cannot help those who are already infected, nor those who will never become infected, it seems obvious that vaccination on a mass basis would not be particularly helpful in the control of tuberculosis in a country where the annual infection rate is low, as in the United States.

Moreover, the widespread use of BCG vaccination would make it impossible to use the tuberculin test as an index of infection in population groups or for the diagnosis of clinical infection or disease in the individual.

The vaccine appears to be as safe, or perhaps safer, than other similar biologic products. However, some lots of the vaccine have produced local complications such as local lymph node abscesses, and there have been several documented cases of disseminated disease due to BCG. In view of the millions of vaccinations that have been done, the risk of serious reactions is extremely small and may, for practical purposes, be disregarded.

The Advisory Committee on BCG to the Surgeon General of U.S.P.H.S. issued a statement⁵ that probably best summarizes the status of BCG in this country today:

The Committee is convinced that large-scale BCG vaccination programs, including routine vaccination of the newborn, are not indicated in this country. It is believed, however, that the advantages of vaccination outweigh the disadvantages for tuberculin-negative persons who are exposed to a definite risk of infection, especially if they cannot be retested frequently with tuberculin. Under certain local circumstances, the following individuals and groups are examples of suitable subjects for BCG vaccination:

1. Physicians, nurses, medical and nursing students, laboratory workers and hospital employees. (It was noted, however, that if a hospital has established an adequate tuberculosis control program, very little exposure to tuberculosis will occur in that institution.)
2. Persons unavoidably exposed to continued contact with infectious cases of tuberculosis in the home.
3. Patients, inmates and employees of institutions such as mental hospitals and prisons, in which case-finding programs indicate that exposure to tuberculosis is likely to be high.

—Henry H. Schultz, M.D., in

NEW YORK STATE J. MED., 59:762-764,
(Mar. 1) 1959 (Abbreviated).

1. Tuberculosis Vaccines Clinical Trials Committee, Medical Research Council: *BRIT. M.J.*, 1:413 (1956).

2. Aronson, J. D., and Palmer, C. E.: *PUB. HEALTH REP.*, 61:802 (1946).

3. Aronson, J. D., Aronson, C. F., and Taylor, H. C.: *ARCH. INT. MED.*, 101:881 (1958).

4. Palmer, C. E., Shaw, L. W., and Comstock, G. W.: *AM. REG. TUBERC.*, 77:877 (1958).

5. Report of Ad Hoc Advisory Committee on BCG to the Surgeon General of the United States Public Health Service: *ibid.*, 76:726 (1957).

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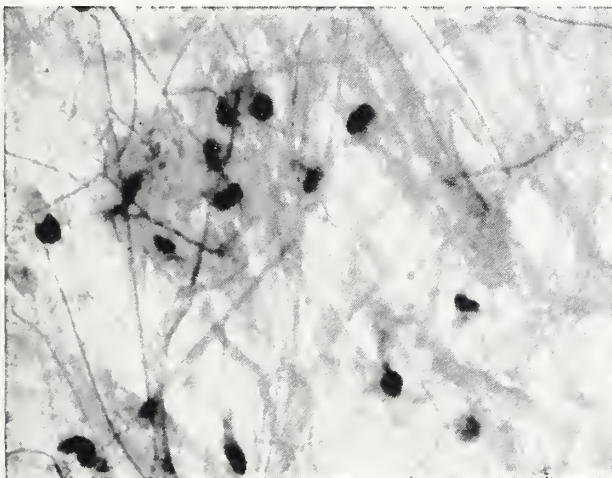
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The possibility of gastric distress from either salicylamide or corticosteroid is minimized because of lower dosage required. This is further reduced by the buffer action of aluminum hydroxide. And the ascorbic acid helps meet the increased need for this vitamin in stress conditions. Because of the low dosage, side effects with Aristogesic have been relatively infrequent and minor in nature. However, more serious side effects have traditionally been observed on all corticosteroid therapy. Patients on long-term Aristogesic therapy should, therefore, be observed carefully.

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Minutes of the Special Session ISMS House of Delegates

Des Moines, February 22, 1959

The House of Delegates of the Iowa State Medical Society was called to order promptly at 9:00 a.m. by Dr. C. V. Edwards, Sr., of Council Bluffs, the speaker.

A motion was made and adopted that the roll call be taken by registration cards. A quorum was present. The attendance included 98 delegates, 12 voting alternates, and 13 ISMS officers, who are *ex-officio* members.

REGISTERED AT SPECIAL SESSION OF HOUSE OF DELEGATES FEBRUARY 22, 1959

<i>County</i>	<i>Delegates</i>	<i>Voting Alternates</i>
Adams	A. W. Brunk	
Appanoose	E. A. Larsen	
Benton	J. E. Blumgren	
Black Hawk	F. G. Loomis	
Boone	R. L. Wicks	
Bremer	R. E. Shaw	
Buchanan	R. L. Knipfer	
Buena Vista	H. E. Farnsworth	
Butler	F. A. Rolfs	
Calhoun	C. R. Wilson	
Carroll	R. J. Ferlic	
Cass	R. H. Moe	
Cerro Gordo	J. K. MacGregor	
	L. W. Swanson	
	G. J. Sartor	
Cherokee	D. C. Koser	
Chickasaw	P. C. Richmond	
Clarke	H. E. Sroy	
Clay		F. D. Edington
Clinton	R. O. Emmons	
	V. W. Petersen	
Dallas-Guthrie	R. J. Peterson	
Decatur	E. E. Gamet	
Delaware	J. E. Tyrrell	
Des Moines		J. F. Foss
Dubuque	F. G. Ober	
	R. J. McNamara	
	D. F. Ward	
	L. P. Alt	
Fayette	A. F. Grandinetti	
Floyd		E. J. Goen
Franklin	W. W. Taylor	
Greene		R. E. Jongewaard
Hamilton	G. A. Paschal	
Hancock-	D. F. Shaw	
Winnebago	J. T. Mangan	
Hardin		R. B. Sherman
Henry	P. G. Couchman	
Howard	D. O. Maland	
Humboldt	J. H. Coddington	
Ida	R. E. Underriner	
Jasper	J. W. Billingsley	
Jefferson	K. H. Strong	
Johnson	K. R. Cross	
		R. A. Simpson
		J. R. Maxwell
	W. M. Kirkendall	
	C. E. Schrock	
	S. C. Ware	M. L. Mosher
		E. W. Paulus
Keokuk	E. R. Gann	
Kossuth	Paul Warner	
Lee	L. C. Pumphrey	
Linn	John Parke	
	L. J. Halpin	
	C. H. Stark	

<i>County</i>	<i>Voting Alternates</i>	<i>Delegates</i>
Mahaska	G. W. Bennett	
Marion	Peter Van Zante	
Marshall	O. D. Wolfe	
Mitchell	R. J. Smith	J. L. Garred
Monona		
Montgomery	Oscar Alden	
Page	J. R. Eisenach	J. L. Coffey
Palo Alto		
Plymouth	J. P. Trotzig	
Pocahontas	J. M. Rhodes	
Polk	J. T. McMillan	
	R. B. Stickler	
	M. E. Alberts	
	T. A. Bond	
	D. F. Crowley, Jr.	
	N. W. Irving, Jr.	
	J. T. Bakody	
	R. A. Dorner	
	B. M. Merkel	A. L. Jenks
	B. C. Barnes	
	J. G. Thomsen	Fred Sternagel
Pottawattamie	H. W. Mathiasen	
	F. N. Weber	
	G. H. Pester (a.m.)	J. B. Conlon (p.m.)
Poweshiek	J. R. Parish	
Ringgold	D. E. Mitchell	
Sac	J. W. Gauger	
Scott	A. B. Hendricks	
	J. H. Sunderbruch	
	J. F. Bishop	
	P. E. Gibson	
Shelby	J. H. Spearing	
Sioux	M. O. Larson	
Story	G. E. McFarland, Jr.	
	G. E. Montgomery	
Tama	C. W. Maplethorpe, Sr.	
Union	H. J. Peggs	
Van Buren	L. A. Coffin	
Wapello	K. E. Lister	
	P. D. McIntosh	
Warren	C. A. Trueblood	
Washington	D. G. Sattler	
Wayne	C. N. Hyatt	
Webster	C. J. Baker	
	H. H. Kersten	
Winneshiek	E. F. Hagen	
Woodbury	P. D. Knott	
	P. L. Bettler	
	H. E. Rudersdorf	
	J. W. Bushnell	
	P. M. Cmeyla	
	C. P. Hawkins	

DELEGATES AT LARGE

T. D. Throckmorton
J. W. Billingsley (also Jasper County delegate)

EX-OFFICIO MEMBERS (Executive Council)

W. D. Abbott
J. W. Billingsley (also Jasper County delegate)
H. E. Farnsworth (also delegate from Buena Vista County)
R. F. Birge
C. V. Edwards
G. H. Scanlon
C. H. Flynn
S. P. Leinbach
R. M. Dahlquist
J. E. Houlihan
D. H. King

M. A. Blackstone
 G. E. McFarland, Jr. (also delegate from Story County)
 C. E. Radcliffe
 J. H. Sunderbruch (also delegate from Scott County)
 G. S. Atkinson
 H. J. Peggs (also delegate from Union County)
 L. V. Larsen
 R. N. Larimer
 D. F. Ward (also delegate from Dubuque County)
 F. C. Coleman

The minutes of the April 23, 1958, meeting of the House of Delegates were approved as published in the July, 1958, issue of the JOURNAL OF THE IOWA STATE MEDICAL SOCIETY.

Dr. Walter D. Abbott, of Des Moines, president of the Iowa State Medical Society, addressed the delegates. In his remarks, he outlined his reasons for calling the special session. He announced the subjects to be considered: (1) Health care of the aged (legislation); (2) Blue Shield proposals (middle-income service contract and plan for the aged); and (3) vendor payment and third parties in medicine.

Dr. Edwards instructed the delegates as to procedures to be followed in the conduct of business of the House of Delegates, and presented a tentative timetable for the work of the day.

Two reference committees were appointed to serve the House of Delegates: (1) Legislative and Blue Shield Proposals, and (2) Vendor Payment and Third Parties. The men appointed to serve on the first-named of those committees included R. N. Larimer, M.D., chairman; S. P. Leinbach, M.D.; John M. Rhodes, M.D.; M. O. Larson, M.D.; and F. G. Ober, M.D. The men appointed to serve on the second of the committees included: C. E. Radcliffe, M.D., chairman; John K. MacGregor, M.D.; Otis D. Wolfe, M.D.; Charles J. Baker, M.D.; and L. A. Coffin, M.D.

During the morning session, reports were presented from the ISMS Committee on Legislation, the Subcommittee on Prepayment Medical Care, Blue Shield, and the Advance Planning Committee. The president of the Society presented the report on the Vendor Payment Program.

Under New Business, 16 resolutions were introduced, all pertaining to the subjects which Dr. Abbott had outlined in his opening remarks.

All committee reports, reports of officers and resolutions were referred to the proper reference committees for study and report.

The House recessed at 12:00 m. for luncheon. The reference committees began their hearings promptly at 1:00 p.m., and continued through the afternoon.

The House was reconvened at 4:30 p.m., but immediately recessed since one of the reference committees had not completed its business and therefore could not report. At 5:30 p.m., the House was called to order.

Having considered the reports of its reference committees, the House established Iowa State Medical Society policy as follows:

VENDOR PAYMENT

The House voted "to temporarily tolerate, but disapprove, this limited medical care program, as now in effect, which provides professional services for public assistance recipients, aid to the blind, and aid to dependent children." However, in establishing this position, the House took other actions which will permit further negotiation with the Department of Social Welfare, and subsequent approval of the plan, provided that certain criteria are met.

The report on Vendor Payment as accepted read as follows:

1. That the actions taken to date by or on behalf of the Iowa State Medical Society in connection with the Vendor Payment Program be, and they hereby are, temporarily tolerated but disapproved.

2. That immediately, the Executive Council direct an appropriate committee to negotiate a system whereby (1) the program shall be conducted in a manner which insures the maximum possible amount of local control, or (2) the Vendor Payment funds could be allocated to private voluntary health insurance systems for coverage of those involved.

3. That the Executive Council be authorized to implement a program, in accordance with these resolutions, with the State Department of Social Welfare, and that such action have the authorization of this House of Delegates.

[By direction of the president, the Committee on Legislation is now investigating ways and means for Vendor Payment funds to be distributed at the county level.]

THIRD PARTIES IN MEDICINE

The AMA Commission on Prepaid Medical Care Plans had issued a comprehensive two-part report shortly prior to the Clinical Session held at Minneapolis in December, 1958, and in consequence the AMA House of Delegates at that meeting requested state societies to establish a policy, each for itself, regarding that report prior to April 8, 1959.

In particular, the AMA House of Delegates requested the ISMS to state its views on two specific questions:

1. *Free Choice of Physician.* Acknowledging the importance of free choice of physician, is this concept to be considered a fundamental principle, incontrovertible, unalterable, and essential to good medical care without qualification?

2. *Closed Panel Systems.* What is or will be your attitude regarding physician participation in those systems of medical care which restrict free choice of physician?

The ISMS House of Delegates, at its special session on February 22, 1959, accepted two statements of principle relating to these AMA reports. In the light of circumstances that exist in Iowa,

as contrasted to the national picture, the ISMS policy was presented in two parts, as follows:

"A. We believe in the principles of (1) freedom of the patient to choose his physician and (2) freedom of the physician to serve his patients free of control by any party.

"B. We believe that the Report of the Commission on Medical Care Plans should be accepted by the AMA as a monumental study which should be utilized as an authoritative reference as future AMA policies are formulated."

At the national level, recognizing the presence of closed-panel systems, the ISMS House of Delegates recommended: "Approval by organized medicine should be given on the individual merits of each panel, and then only when the following basic concepts have been met: (1) that the panel must be able to provide good quality medical care, equal to that obtainable otherwise in the community; (2) that the panel must allow freedom on the part of the physician to act and treat patients as he deems best; (3) that no third party shall profit financially from the services of physicians in a closed-panel; (4) that approval or disapproval of a closed panel, in order to assure perpetual good quality medical care, shall be based on a continuing process of re-evaluation of the care being offered; (5) that free choice of physician by the patient shall be provided insofar as possible; (6) that the patient must also be allowed choice between the panel and other available health insurance; and (7) that improper solicitation and advertising by closed-panels shall be discouraged."

These seven points were developed because of the existence of closed-panel plans in other parts of the country. By and large, closed-panel plans are not in existence in Iowa. Actually, these closed-panel systems would be illegal according to Iowa law.

HEALTH CARE OF THE AGED (LEGISLATION)

Because of the seriousness of the situation in Congress in reference to legislation pertaining to medical care for those 65 years of age or over, the ISMS House of Delegates, on the recommendation of its reference committee, adopted four recommendations of its Committee on Legislation which can be summarized as follows: (1) That Blue Shield be authorized to implement immediately a set of contracts for Iowa's senior citizens, as well as contracts on a service basis at higher income levels. (2) That Blue Cross be urged to develop suitable contracts for senior citizens. (3) That the ISMS cooperate with commercial insurance companies in the development of suitable coverage for the aged. (4) That the ISMS explore and implement means of cooperating with other groups in more active participation in the political life of the community and nation.

At the request of the ISMS Subcommittee on Prepayment Medical Care, Blue Shield officials, acting on the authority of their Board of Directors,

had presented a middle-income service contract and a plan for the aged at the morning meeting of the February 22 session of the ISMS House of Delegates. These two proposals were incorporated into a seven-point Blue Shield program. As the ISMS House of Delegates accepted them, those seven points were as follows: (1) Implementation of a middle-income service contract for which the ceilings will be: single, \$3,600 or net worth of \$36,000; two-person, \$4,500 or net worth of \$45,000; family, \$5,400 or net worth of \$54,000. (2) Development of a pilot program on a service basis for persons 65 years of age or over, with rates comparable to those for younger age groups. (Income ceilings for service contracts: single, \$2,000 or net worth of \$20,000; family, \$3,000 or net worth of \$30,000.) (3) Increased sales activity for B-300 and Blue Chip contracts. (4) Closer cooperation between Blue Shield and ISMS. (5) Increased efficiency in Blue Shield operations at all levels. (6) Exploration of the possibility of expanding office coverage by Blue Shield. (7) More effective coordination of Blue Shield programs in Iowa with national and other state programs.

The House of Delegates completed its business and adjourned at 8:30 p.m.

AUTO ACCIDENTS AND THE PHYSICIAN

Following a two-year study, the AMA Committee on Medical Aspects of Automobile Accidents published a new Guide for Physicians in the March 14 issue of J.A.M.A. "On the basis of present knowledge," the Committee said, "a conscientious medical evaluation of the individual's fitness to drive safely, with appropriate follow-up, can reduce motor vehicle accidents very significantly."

In general, the Guide stated, an individual should be assessed medically to determine the answers to the following questions:

Has the patient the physical and mental ability to manipulate the controls?

Is the patient likely to suffer excessive fatigue that will impair his driving ability?

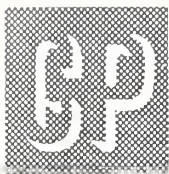
Does the patient have the required vision and hearing for safe driving?

Has the patient any physical or mental disorder likely to cause confusion or a sudden loss of consciousness while driving?

Is the patient likely to suffer a temporary impairment of mental, physical or functional capacity due to alcohol, drugs, infections or medical treatment?

Does the patient have good emotional control, or has he signs of antisocial behavior or an emotional disturbance making it unsafe for him to drive?

Frequently, the Committee said, it may be necessary for a physician to caution the patient against driving for a certain period of time, or even permanently.



Iowa Academy of General Practice

LEDERLE SYMPOSIUM IN DES MOINES

All physicians and their wives are invited to attend the Lederle Symposium on General Medicine, a one-day meeting which is to be held on Wednesday, May 13, at the Hotel Fort Des Moines, in Des Moines, under the sponsorship of the American Academy of General Practice and the Lederle Laboratories Division of the American Cyanamid Co.

Following is the program that has been formulated by the Program Committee of the Iowa Chapter:

"Obstetrical Emergencies"—M. E. Davis, M.D., professor of obstetrics and gynecology at the University of Chicago

"Diet in Heart Disease"—Ancel Keys, Ph.D., of the University of Minnesota

"Surgical Emergencies"—Philip Thorek, M.D., clinical associate professor of surgery, University of Illinois

"Pediatric Emergencies"—Arild E. Hansen, M.D., professor and chairman of pediatrics at the University of Texas

"Common Nose and Throat Problems"—Dean M. Lierle, M.D., professor and head of otolaryngology and maxillofacial surgery at the S.U.I. College of Medicine

"Emotional Problems in Children"—Beverly T. Mead, M.D., associate professor of psychiatry at the University of Utah.

Following the luncheon, at which all physicians and their wives will be guests of Lederle Laboratories, Alson E. Braley, M.D., head of the Department of Ophthalmology at the S.U.I. College of Medicine, will speak on the topic "The Eye Bank."

The Lederle representatives will serve coffee to the ladies at a Hospitality Room in the Fort Des Moines Hotel during the morning, and plans are being made to present a special program for them in the afternoon. Following the scientific program, everyone is invited to a reception which will take place between 5:30 and 6:30 p.m.

There will be no fees for this meeting. Everyone is invited to be a guest of Lederle.

Five hours of Category I credit can be obtained through attendance at these lectures.

IOWA CHAPTER PARTY

The Iowa Chapter of the American Academy of General Practice, which formerly has held a luncheon during each annual meeting of the Iowa State Medical Society, has this year made arrangements for a cocktail party, from 6:00-8:00 p.m., at the Savery Hotel, on Monday, April 20. Tickets will be \$1.00 per person, and all general practitioners and their wives are invited to attend.

Plan to support your State Medical Society by attending its annual meeting, and enjoy the fellowship of GP's at the Iowa Academy's cocktail party.

DATES SET FOR ANNUAL SCIENTIFIC ASSEMBLY

The Eleventh Annual Scientific Assembly of the Iowa Chapter of the American Academy of General Practice will be held at Hotel Savery, in Des Moines, on September 27, 28 and 29, 1959.

Mark these dates on your calendar now!

GERONTOLOGY SHORT COURSE

Washington University School of Medicine's Third Annual Postgraduate Course in Geriatric Medicine, in St. Louis on May 21 and 22, will emphasize heart disease and the psychosocial problems of later life. Clinical application of the basic principles of disease management will be stressed. There will be no tuition, and AAGP members can earn Category I credit by attending it. For further information, address the Division of Gerontology, Washington University School of Medicine, 5600 Arsenal Street, St. Louis 9.

Attend the
1959 ISMS ANNUAL MEETING
April 19-22
Des Moines

THE DOCTOR'S BUSINESS

Tax-Free Bonds

HOWARD D. BAKER

WATERLOO



At various times on this page, we have discussed the merits of balancing an investment portfolio between "fixed dollar-value" and "variable dollar-value" holdings. The former are contracts calling for the future payment of agreed numbers of dollars. One should invest some of his funds in them so that he may preserve a measure of liquidity in his assets. The latter are stocks, pieces of real estate, etc. that will return whatever happens to be their market value at the time of their sale. One buys them chiefly as a hedge against inflation.

We ordinarily think of federal bonds and savings accounts at banks or building and loan associations as constituting the two chief kinds of fixed-dollar investments, but for an individual in a high federal income tax bracket, the net return from such holdings, after taxes, may often be less than 1.5 per cent!

Contrastingly, the interest received on the so-called "municipal" bonds—the obligations of states, territories, counties, cities, school districts, public housing authorities, etc.—is entirely exempt from federal income taxes under the provisions of the 1954 Internal Revenue Code. Thus, even though the promised rate of return on such bonds is the same as or at most only slightly higher than that which is paid on federal bonds or on B & L savings accounts, their net yield is usually considerably more attractive, and often, indeed, compares

favorably with the return realized from common stocks and from shares in investment trusts.

The table at the bottom of this page shows what rates of return persons in various federal income tax brackets would need to collect from investments of other sorts in order to realize an after-tax net equal to the return on municipal bonds having various lower interest rates. For example, the third line shows that a taxpayer in the 50 per cent bracket would need to find an investment returning him 5 per cent if, after taxes, he were to have as much left as a municipal bond paying 2.5 per cent would let him have tax-free. The advantages of such bonds grow as one's taxable income increases.

There are relatively large numbers of tax-free issues for sale today. School, road and bridge, and other general obligation bonds, which are secured by the taxing authority of the issuing government, yield between 2 and 4 per cent, free from income tax. Bonds issued to finance revenue-producing utilities like state university dormitories, pay somewhat higher yields because interest payments will be met and redemption will be contingent upon income such as students' rent payments. The history of these latter bonds is good, and they present the same tax advantages.

COMPARISONS BETWEEN TAX-FREE AND TAXABLE YIELDS
FOR INDIVIDUALS IN HIGH FEDERAL INCOME TAX BRACKETS

Tax-Free "Municipals" Yielding	Equivalent Yields for Taxable Holdings of Persons in						
	34% Bracket	38% Bracket	43% Bracket	47% Bracket	50% Bracket	53% Bracket	56% Bracket
2.25%	3.41%	3.63%	3.95%	4.25%	4.50%	4.79%	5.11%
2.40	3.64	3.87	4.21	4.53	4.80	5.11	5.45
2.50	3.79	4.03	4.39	4.72	5.00	5.32	5.68
2.60	3.94	4.19	4.56	4.91	5.20	5.53	5.91
2.75	4.17	4.44	4.82	5.19	5.50	5.85	6.25
2.80	4.24	4.52	4.91	5.28	5.60	5.96	6.36
2.90	4.39	4.68	5.09	5.47	5.80	6.17	6.59
3.00	4.55	4.84	5.26	5.66	6.00	6.38	6.82
3.10	4.70	5.00	5.44	5.85	6.20	6.60	7.05
3.25	4.92	5.24	5.70	6.13	6.50	6.91	7.39
3.50	5.30	5.65	6.14	6.60	7.00	7.45	7.95
3.75	5.68	6.05	6.58	7.08	7.50	7.98	8.52

COUNTY MEDICAL SOCIETY OFFICERS

COUNTY	PRESIDENT	SECRETARY	DEPUTY COUNCILOR
Adair	C. D. Shope, Greenfield	A. S. Bowers, Orient	A. J. Gantz, Greenfield
Adams	C. L. Bain, Corning	J. C. Nolan, Corning	J. C. Nolan, Corning
Allamakee	C. W. Rominger, Waukon	R. R. Jeffries, Waukon	
Appanoose	F. B. Leftert, Centerville	E. A. Larsen, Centerville	E. A. Larsen, Centerville
Audubon	R. L. Bartley, Audubon	P. E. James, Audubon	H. K. Merselis, Audubon
Benton	L. W. Kooztz, Vinton	N. C. Knosp, Belle Plaine	N. C. Knosp, Belle Plaine
Black Hawk	F. M. Marquis, Waterloo	M. M. Wicklund, Waterloo	C. D. Ellyson, Waterloo
Boone	J. M. Wall, Boone	W. G. Dennert, Boone	R. L. Wicks, Boone
Bremer	V. H. Carstensen, Waverly	H. M. Hanson, Waverly	
Buchanan	P. J. Leehey, Independence	J. L. Mochal, Independence	P. J. Leehey, Independence
Buena Vista	R. J. Mattice, Sioux Rapids	T. E. Shea, Storm Lake	
Butler	B. V. Andersen, Greene	F. F. McKean, Allison	F. F. McKean, Allison
Calhoun	P. W. Van Metre, Rockwell City	Dale Christensen, Lake City	G. S. Rost, Lake City
Carroll	J. M. Tierney, Carroll	P. T. Cawley, Carroll	J. M. Tierney, Carroll
Cass	J. L. LaRue, Anita	E. M. Juel, Atlantic	E. M. Juel, Atlantic
Cedar	H. E. O'Neal, Tipton	O. E. Kruse, Tipton	H. E. O'Neal, Tipton
Cerro Gordo	J. E. Christopherson, Mason City	J. R. Utne, Mason City	H. G. Marinos, Mason City
Cherokee	J. H. Wise, Cherokee	R. D. Berge, Aurelia	H. J. Fishman, Cherokee
Chickasaw	C. W. Clark, Nashua	P. M. Porter, New Hampton	M. J. McGrane, New Hampton
Clarke	E. E. Lauvstad, Osceola	G. I. Armitage, Osceola	G. B. Bristow, Osceola
Clay	J. J. Buchanan, Milford	Emunice M. Christensen, Spencer	C. C. Jones, Spencer
Clayton	D. W. Pfeiffer, McGregor	E. E. Zehr, Guttenberg	P. R. V. Hommel, Elkader
Clinton	W. H. Griffith, Clinton	T. G. Wellman, Clinton	V. W. Petersen, Clinton
Crawford	D. N. Crabb, Denison	J. M. Hennessey, Manilla	R. A. Huber, Charter Oak
Dallas-Guthrie	Herbert Neff, Guthrie Center	C. A. Nicoll, Panora	A. G. Felter, Van Meter
Davis	P. T. Meyers, Bloomfield	Richard Schoonover, Bloomfield	W. A. Seidler, Jr., Jamaica
Decatur	L. N. Spohnheimer, Leon	E. E. Gamet, Lamoni	H. J. Gilfillan, Bloomfield
Delaware	R. E. Clark, Manchester	J. D. Compton, Edgewood	E. E. Gamet, Lamoni
Des Moines	J. F. Foss, Burlington	F. D. Winter, Burlington	R. E. Clark, Manchester
Dickinson	D. F. Rodawig, Jr., Spirit Lake	Ruth F. Wolcott, Spirit Lake	J. F. Foss, Burlington
Dubuque	K. K. Hazlet, Dubuque	Frederick Fuerste, Jr., Dubuque	Ruth F. Wolcott, Spirit Lake
Emmet	D. E. Dunn, Estherville	D. D. Schmitt, Ringsted	F. Ward, Dubuque
Fayette	H. C. Hallberg, Oelwein	D. A. Freed, West Union	E. K. Vaubel, Estherville
Floyd	E. V. Ayers, Charles City	J. G. Baumann, Charles City	A. F. Grandinetti, Oelwein
Franklin	Dorothy Heuermann, Coulter	D. K. Bengel, Hampton	E. V. Ayers, Charles City
Fremont		A. R. Wanamaker, Hamburg	W. L. Randall, Hampton
Greene	M. F. Wetrich, Grand Junction	P. E. Lohr, Churdan	K. D. Rodabaugh, Tabor
Grundy	Varina Des Marias, Grundy Center	J. J. Meyer, Wellsburg	E. D. Thompson, Jefferson
Hamilton	R. A. Patterson, Webster City	E. F. Brown, Webster City	E. A. Reedholm, Grundy Center
Hancock-Winnebag	J. T. Enggas, Britt	H. G. Feldick, Buffalo Center	W. B. McGahey, Webster City
Hardin	J. L. Smith, Iowa Falls	F. N. Cole, Iowa Falls	T. J. Irish, Forest City
Harrison	J. W. Barnes, Woodbine	R. G. Wilson, Missouri Valley	L. F. Parker, Iowa Falls
Henry	P. G. Couchman, Mt. Pleasant	Robert Wettach, Mt. Pleasant	A. C. Bergstrom, Missouri Valley
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Ida	E. H. Heilman, Ida Grove	J. B. Dressler, Ida Grove	I. T. Schultz, Humboldt
Iowa	H. F. Moessner, Amana	I. J. Sinn, Williamsburg	J. B. Dressler, Ida Grove
Jackson	J. W. Jordan, Maquoketa	M. B. Williams, Maquoketa	C. F. Watts, Marengo
Jasper	L. D. Norris, Newton	L. L. Jones, Newton	O. L. Frank, Maquoketa
Jefferson	F. H. McClurg, Fairfield	C. F. Watson, Fairfield	J. W. Ferguson, Newton
Johnson	J. R. Maxwell, Iowa City	R. A. Wilcox, Iowa City	J. W. Castell, Fairfield
Jones	G. F. Brown, Anamosa	J. L. Bailey, Anamosa	L. H. Jacques, Iowa City
Keokuk	R. L. Augspurger, Sigourney	E. R. Gann, Sigourney	T. M. Redmond, Monticello
Kossuth	M. G. Bourne, Algona	P. L. Warner, Wesley	R. G. Gillett, Sigourney
Lee	F. L. Steffey, Keokuk	Sebastian Ambery, Keokuk	M. G. Bourne, Algona
Linn	K. W. Woodhouse, Cedar Rapids	C. F. Watts, Cedar Rapids	G. H. Ashline, Keokuk
Louisa			G. C. McGinnis, Ft. Madison
Lucas	A. L. Yocom, Chariton	R. E. Anderson, Chariton	H. J. Jones, Cedar Rapids
Lyon	H. H. Gessford, George	S. H. Cook, Rock Rapids	E. S. Groben, Columbus Junction
Madison	J. E. Evans, Winterset	R. W. Carson, Winterset	A. L. Yocom, Chariton
Mahaska	R. E. Phelps, New Sharon	D. K. Campbell, Oskaloosa	S. H. Cook, Rock Rapids
Marion	Yme Sloterdijk, Knoxville	D. H. Hake, Knoxville	J. E. Evans, Winterset
Marshall	L. O. Goodman, Marshalltown	D. S. Reading, Marshalltown	R. L. Alberti, Oskaloosa
Mills	W. A. De Young, Glenwood	M. L. Scheffel, Malvern	D. H. Hake, Knoxville
Mitchell	T. G. Walker, Riceville	W. A. Spencer, Osage	R. C. Carpenter, Marshalltown
Monona	L. A. Gaukel, Onawa	W. P. Garred, Onawa	M. L. Scheffel, Malvern
Monroe	H. J. Richter, Albia	D. N. Orelup, Albia	T. E. Blong, Stacyville
Montgomery	F. A. Hansen, Red Oak	S. D. Poore, Villisca	L. A. Gaukel, Onawa
Muscatine	O. S. Keiser, Muscatine	E. E. Peters, Muscatine	D. N. Orelup, Albia
O'Brien	N. E. Weems, Paullina	A. D. Smith, Primghar	H. C. Bastron, Red Oak
Osceola	J. H. Thomas, Sibley	F. B. O'Leary, Sibley	K. E. Wilcox, Muscatine
Page	J. R. Eisenach, Shenandoah	K. V. Jensen, Clarinda	E. B. Getty, Primghar
Palo Alto	H. L. Brereton, Emmetsburg	C. C. Moore, Emmetsburg	F. M. Rizzo, Sibley
Plymouth	J. P. Trotzig, Akron	F. C. Bendixen, Le Mars	K. J. Gee, Shenandoah
Pocahontas	J. B. Thielen, Fonda	V. L. Pitluck, Laurens	H. L. Brereton, Emmetsburg
Polk	B. C. Barnes, Des Moines	H. L. Schlaser, Des Moines	R. J. Fisch, Le Mars
Pottawattamie	J. C. Kruml, Council Bluffs	G. V. Caughlan, Council Bluffs	C. L. Jones, Gilmore City
Poweshiek	J. G. DeMeulenaere, Grinnell	E. S. Korfmacher, Grinnell	J. G. Thomsen, Des Moines
Ringgold	D. E. Mitchell, Mt. Ayr	J. W. Hill, Mt. Ayr	G. H. Pester, Council Bluffs
Sac	John Hubiak, Odebolt	A. A. Blum, Wall Lake	S. D. Porter, Grinnell
Scott	A. C. Sorenson, Davenport	A. B. Hendricks, Davenport	J. W. Gauger, Early
Shelby	W. S. Markham, Harlan	D. W. Dohnalek, Harlan	Erling Larson, Davenport
Sioux	C. V. Griesy, Rock Valley	A. L. McGilvra, Sioux Center	J. H. Spearing, Harlan
Story	R. H. Heise, Story City	J. F. Bacon, Ames	M. O. Larson, Hawarden
Tama	C. R. Roberts, Dysart	A. J. Havlik, Tama	J. D. Conner, Nevada
Taylor	R. W. Boulden, Lenox	G. W. Rimel, Bedford	A. J. Havlik, Tama
Union	H. J. Peggs, Creston	W. A. Mulford, Creston	R. W. Boulden, Lenox
Van Buren	Kiyoshi Furumoto, Keosauqua	J. T. Worrell, Keosauqua	H. J. Peggs, Creston
Wapello	Stephan Fox, Ottumwa	R. A. Hastings, Ottumwa	Kiyoshi Furumoto, Keosauqua
Warren	L. W. Porter, Indianola	R. C. McGeehon, Indianola	L. J. Gule, Ottumwa
Washington	W. S. Kyle, Washington	E. J. Vosika, Washington	C. A. Trueblood, Indianola
Wayne	C. F. Brubaker, Corydon	J. H. McCall, Allerton	G. E. Montgomery, Washington
Webster	D. E. Tyler, Fort Dodge	K. M. Wilcox, Fort Dodge	D. R. Ingraham, Sewal
Winnebago	L. E. Larson, Decorah	E. F. Hagen, Decorah	C. J. Baker, Fort Dodge
Woodbury	J. D. Lutton, Sioux City	D. E. Howard, Sioux City	E. F. Hagen, Decorah
Worth	R. L. Olson, Northwood	W. G. McAllister, Manly	D. B. Blume, Sioux City
Wright	Dale Harding, Eagle Grove	R. F. McCool, Clarion	C. T. Berge, Northwood
			S. P. Leinbach, Belmont

THE JOURNAL *Book Shelf*



BOOKS RECEIVED

THE ONSET OF STUTTERING: RESEARCH FINDINGS AND IMPLICATIONS, by *Wendell Johnson* and associates. (Minneapolis, University of Minnesota Press, 1959. \$5.00).

CHILDBEARING BEFORE AND AFTER 35, by *Adrien Bleyer*, M.D. (New York, Vantage Press, 1958. \$2.95).

MATERNITY: A GUIDE TO PROSPECTIVE MOTHERHOOD, by *Frederick W. Goodrich, Jr.*, M.D. (New York, Prentice-Hall, Inc., 1959. \$1.75).

MEDICINE FOR NURSES, FOURTH EDITION, by *M. Toohey*, M.D. (Baltimore, The Williams & Wilkins Company, 1959. \$7.00).

TEXTBOOK ON SURGERY, THIRD EDITION, ed. by *H. Fred Mosely*, M.A., D.M., M.Ch. (Oxon.) (St. Louis, C. V. Mosby Company, 1959. \$17.00).

THE PLASMA PROTEINS: CLINICAL SIGNIFICANCE, by *Paul G. Weil*, Ph.D. (Philadelphia, J. B. Lippincott Company, 1959. \$3.00).

CURRENT THERAPY—1959: LATEST APPROVED METHODS OF TREATMENT FOR PRACTICING PHYSICIANS, ed. by *Howard F. Conn*, M.D. (Philadelphia, W. B. Saunders Company, 1959. \$12.00).

THE ECOLOGY OF HUMAN DISEASE, by *Jacques M. May*, M.D. (New York, MD Publications, Inc., 1959. \$7.50).

A HISTORY OF OPHTHALMOLOGY, by *George E. Arrington, Jr.*, M.D. (New York, MD Publications, Inc., 1959. \$4.00).

DISEASES OF THE COLON AND ANORECTUM, TWO VOLUMES, ed. by *Robert Turell*, M.D. (Philadelphia, W. B. Saunders Company, 1959. \$35.00).

A HISTORY OF NEUROLOGY, by *Walther Riese*, M.D. (New York, MD Publications, Inc., 1959. \$4.00).

THE ANATOMY OF THE NERVOUS SYSTEM: ITS DEVELOPMENT AND FUNCTION, by *Stephen Walter Ranson*, M.D., revised by *Sam Lillard Clark*, M.D. (Philadelphia, W. B. Saunders Company, 1959. \$9.50).

VASCULAR SPIDERS AND RELATED LESIONS OF THE SKIN, by *William B. Bean*, M.D. (Springfield, Illinois, Charles C Thomas, 1959. \$8.50).

PEDIATRIC METHODS AND STANDARDS, THIRD EDITION, ed. by *Fred H. Harvie*, M.D. (Philadelphia, Lea & Febiger, 1958. \$4.50).

BOOK REVIEWS

LESIONS OF THE LOWER BOWEL, by *Raymond J. Jackman*, M.D. (Springfield, Illinois, Charles C Thomas, 1958, \$15.50).

In this book, Dr. Jackman has made a contribution which should be included in the library of every interne, resident, internist, general practitioner and every other physician dealing with such lesions, whether general surgeon or proctologist.

Primarily, it deals with the diagnosis of this portion of the anatomy. Dr. Jackman's descriptions of the various conditions depicted reflect his keen sense of observation and his experience in the field of

proctology. Besides being readable and concise, the book contains 56 illustrations and 75 color plates to aid the reader in the digest of the subject. Nothing is left to the imagination. The author, illustrators, the photographer and the publishers have collaborated in bringing forth a real contribution to medical knowledge. From Chapter I, dealing with the complete anatomy of the anorectal, rectosigmoid and sigmoid colon, to and through Chapter XXVIII, dealing with the nonmalignant anal and perianal lesions, one will find that the work is not just a textbook for the neophyte but a ready and completely illustrated reference book for the specialist.

I urge the acquisition of this volume, and suggest that Dr. Jackman has earned a "well done" for this medical contribution.—*Donovan F. Ward*, M.D.

Dr. Jackman has probably done more proctoscopies than has any other active practitioner, and he has written this new book to aid those of us who have had but meager experience in proctoscopic diagnosis. In order to present the complete scope of the subject, he has included sections on anatomy, physiology of the large intestine, technic of proctoscopy and sections on the diagnosis of intrinsic and extrinsic diseases as they affect the anus and rectosigmoid. He has also included 75 color photographs of superior quality. He has been able to accomplish his goal in a book much shorter than its number of pages (337) would suggest, for the print is large and the numerous illustrations take up a great deal of space.

Dr. Jackman has had unexcelled opportunities for experience in his situation at the Mayo Clinic, and it is a joy to read his conclusions, most of which are not new but are just common sense.

I should have preferred for him to have taken a little more time to include therapy for anorectal-sigmoidal conditions so that the book might have been more inclusive. He could have offered us many therapeutic hints in addition to the diagnostic ones that the book contains. But he has intended to present only the diagnostic aspects of the problem, and has done an excellent job in what he undertook to do.

Practicing physicians who do proctoscopic examinations would do well to avail themselves of this volume.—*Daniel A. Glomset*, M.D.

BONE TUMORS, SECOND EDITION, by *Louis Lichtenstein*, M.D. (St. Louis, C. V. Mosby Company, 1959. \$12.00).

This new edition of Dr. Lichtenstein's book is enhanced by numerous added illustrations, revisions and amplifications. During the past six years, the book

has been accepted generally as one of the most authoritative texts on bone tumors.

Every physician would do well to have this volume in his library.—*Everett M. George, M.D.*

SCHIZOPHRENIA, by *Manfred Sakel, M.D.* (New York, Philosophical Library, Inc., 1958. \$5.00).

This book and one on epilepsy comprise the final works, so far as I know, that Manfred Sakel wrote, and in a way they represent a summary of the creativeness of this physician. As Dr. Hans Hoff, director of the Psychiatric Clinic of Vienna, has said in the preface to it, Dr. Sakel's introducing the form of treatment that now bears his name was one of the milestones—perhaps the first—in the current advance of psychiatry. The care of mental patients prior to that time had more or less achieved human standards, but the therapeutic attitude had been nihilistic. Dr. Sakel's introducing insulin shock therapy in 1927 appears to have begun a great advance in psychiatry. Thus, his reputation is secure regardless of whether his concepts of man and of disease and his form of treatment are in the end considered adequate.

Dr. Sakel's book SCHIZOPHRENIA is divided into two parts. The first concerns itself with the etiology, symptomatology and psychopathology of schizophrenia, and the second concerns itself with insulin shock therapy. The opening chapter, Dr. Sakel preserves for an elucidation of the basic concepts of his psychodynamics. He says that man has to be considered as indivisible on all levels, and he postulates the existence of three basic drives which we feel would be called instincts: the instinct for self-defense; the instinct for the propagation of the species; and the instinct to seek answers to the question "Why?" He seems to say, though not in so many words, that with the development of man something new appeared and something was added to the physiology, the anatomy, of animalistic man that did not exist in other species. Though I may be mistaken, that idea seems hardly scientific. Dr. Sakel's third instinct, the quest for WHY, seems to me not to be an instinct at all but to be the outgrowth of one of the other two drives or motivations.

Be that as it may, Dr. Sakel continues through the rest of the book with a very adequate and fine description of schizophrenia, its symptoms, its characteristics and its types, and shows a thorough acquaintance with this illness. In my opinion, he very shrewdly divides psychiatric illnesses into those which are of functional origin (i.e., neuroses, behavior disorders and characterological disturbances), and those which represent a breakdown in the functioning of the central nervous system (manic-depressive psychoses, schizophrenia and similar illnesses).

The second part of the book concerns itself with the discovery and development of insulin therapy, and discusses the indications for it, the technic of its administration, and the various phases into which the therapy is divided. That presentation is precise, meticulous and of utmost value to anyone engaged in that type of psychiatric work. The author also carefully describes a number of possible complications of such treatment, and recites the indications for individual-

izing therapy to the patient and to the particular type of illness that is present. He takes up the use of Metrosol in the production of a convulsion with the patient in a hypoglycemic state, and essentially, he concludes his work by expounding the hypothesis upon which this form of therapy is based. His hypothesis is that an illness such as schizophrenia is the result of a disturbance in physiological mechanisms (intracellular systems). He proposes that through the use of similar substances the functioning of the central nervous system can be altered, and that this alteration will produce a therapeutic benefit. Whether or not this type of therapy will continue in use is, so far as this book is concerned, a moot point.—*Howard V. Turner, M.D.*

EPILEPSY, by *Manfred Sakel, M.D.* (New York, Philosophical Library, Inc., 1958. \$5.00).

This is the second of Dr. Sakel's works to be published within the past year. According to the publishers, this book was printed directly from the manuscripts as Dr. Sakel wrote them. His death prevented him from revising or editing the material.

The book is essentially in two parts. Part I consists principally of a very adequate, interesting but not remarkable description of the symptomatology and other manifestations of epilepsy, including the usual classification, the usual description of the significance of the electroencephalograph, and discussion of the pathogenesis and the etiology. There is a short but fairly adequate description of the therapy that is currently employed and a discussion of physical exercise as a contributing factor in the therapeutic management of epileptic patients.

Part II is an interesting and perhaps noteworthy presentation of a theory about the basic etiology of idiopathic epilepsy. From his clinical experience and from his general theories as to the etiology of psychiatric diseases, Dr. Sakel developed the concept that an epileptic attack and/or its equivalent represent an effort on the part of the autonomic nervous system to achieve a state of homeostasis for its component parts. Beginning with this concept, Dr. Sakel proposed that the symptomatology of epilepsy and its etiology can be modified by securing an increase in the neurotonic or thyrotropic or sympathetic side of the autonomic balance. To achieve this, he proposed the transplantation of hyperactive thyroid tissue from thyrotoxic patients into the thyroid glands of epileptic ones, and actually performed the operation in two instances. One of the epileptic patients improved, but the other appears not to have done so. It was a sheer clinical accident that caused the hyperactive thyroid tissue to be extracted from a patient who himself had previously suffered from idiopathic epilepsy, and it is noted that following the relief of the patient's thyrotoxic condition, a return to the epileptic state took place.

This book, along with Sakel's recently published work on schizophrenia, represents a great deal of clinical experience, original thought and creativeness. As such, it is worthy of consideration.—*Howard V. Turner, M.D.*

CLINICAL ENDOCRINOLOGY, SECOND EDITION, by *Karl E. Paschkis, M.D., Abraham E. Rakoff, M.D., and Abraham Cantarow, M.D.* (New York, Paul B. Hoeber, 1958, \$18.00).

This textbook on endocrine diseases has, at the beginning of each section, a discussion of the embryology, anatomy and physiology of the particular gland. Thus, the individual diseases can be introduced as variants of the normal physiology. For example, Addison's disease is presented as a hypofunction of the adrenal. Thus the authors stress the importance of a sound background in endocrine physiology as a basis for recognition and rational management of the diseases.

The clinical features and their physiologic bases are presented unusually well. The sections on differential diagnosis are excellent. Laboratory procedures of value in confirmation are presented with enough explanation of their underlying principles to permit interpretation. No attempt is made to present technical detail. Where there is controversy regarding management, the authors have stated their preference.

This volume undoubtedly was prepared as a text for undergraduates, but it is an excellent reference for the clinician.—*Loren G. Peterson, M.D.*

HORMONE PRODUCTION IN ENDOCRINE TUMORS (CIBA FOUNDATION COLLOQUIA ON ENDOCRINOLOGY, VOL. XII), ed. by *G. E. W. Wolstenholme, O.B.E., M.A., M.B., B.Ch., and Maeve O'Connor, B.A.* (Boston, Little, Brown and Company, 1958, \$9.00).

This volume is a collection of papers reporting investigations in the pathology, pathophysiology and biochemistry of hormone-producing tumors. Tumors of the thyroid, adrenal, pituitary and gonad are discussed. Melanomas and their relationship to the pituitary in experimental animals are reported upon. Goitrogen-induced tumors of the thyroid and production of abnormal iodinated compounds in thyroid tumors are recounted. The current concepts of adrenal steroid synthesis in the normal, and the nature of the disturbance in metabolism in certain types of adrenal hyperplasia are discussed. There are papers on ovarian tumorigenesis and on production of estrogens in certain ovarian tumors. Other endocrine systems are represented as well.

Newer biochemical techniques have been applied in these investigations, ones which potentially will increase our understanding of tumor production to a great extent and provide possible methods of recognizing the abnormal products of endocrine tumors. The average clinician will probably find little of practical value in this book, but many will find it stimulating.—*Loren G. Peterson, M.D.*

DIFFICULT DIAGNOSIS: A GUIDE TO THE INTERPRETATION OF OBSCURE ILLNESS, by *H. J. Roberts, M.D.* (Philadelphia, W. B. Saunders Company, 1958, \$19.00).

Once in a decade a text book appears with a new twist, and this one is it. Dr. Roberts says he wrote it because "I needed a book like this in my own practice." The book is clearly addressed to the practitioner and is designed to aid him in recollecting the conditions that can cause obscure illness. The main

body of the rather large volume is devoted to "Groupings of Related Diseases Frequently Producing Puzzling Illness." Subgroups of those diseases are such ones as endocrinopathies, fever and infection of obscure origin, dyscollagenoses, iatrogenic illness and obscure postoperative complications are taken up in succession.

Following those is a "Classification and Analysis of Useful Diagnostic Procedures." In this part of the book are listed all types of tests, including "withdrawal" and "provocative" ones, with short descriptions, normal and abnormal values, and indications for performing them. An extensive bibliography follows each section.

This is a fascinating and provocative book. Most of the sections begin with the statement that the usual textbook descriptions of the disease are presumed to be generally known. Then, the author goes on to point out the unusual features of the condition, to tell the practitioner what one must be wary of and what one must think of when he is confronted by a specific situation such as obscure cardiomegaly.

Most busy doctors assume that each patient has a common disorder such as a neurosis, an ulcer or coronary disease. Such an assumption follows from their observation that most patients do have common diseases and that other possibilities need be considered no more than infrequently. Shortly after finishing their internships or residencies, physicians do think of the unusual possibilities, but their suspicions are quickly lulled until they rarely consider anything other than the commonplace alternatives. This book is designed to shake doctors out of the mental lethargy into which years of practice have led them, and to make them take an extra few minutes to think again of the unusual. If it accomplishes that goal, I am sure that the author will have been amply rewarded.—*Daniel A. Glomset, M.D.*

PRACTICAL DERMATOLOGY, SECOND EDITION, by *George M. Lewis, M.D.* (Philadelphia, W. B. Saunders Company, 1959, \$8.00).

The physical aspects of this book are excellent, e.g., the print is the exact size for easy reading.

The text gives a perspective of dermatologic conditions, rather than a comprehensive elaboration of them. It is concise and it reads well. A variety of conditions are very well illustrated.

As the author has stated in his preface, the book is "designed as a text for medical students, a practical guide for general practitioners, and an aid in orientation for other specialists."

The author wanted to keep down the size of the book, but I think it would have been more valuable if it were less concise and if each chapter had been made a little more comprehensive.—*S. Greenhill, M.D.*

Attend the
ISMS ANNUAL MEETING
Veterans Auditorium, Des Moines
April 19-22, 1959

THE MANAGEMENT OF FRACTURES AND DISLOCATIONS, AN ATLAS, VOLUMES I AND II, by *Anthony F. DePalma*, M.D. (Philadelphia, W. B. Saunders Company, 1959. \$35.00).

This two-volume atlas answers a need for a comprehensive treatise on the subject of fractures and dislocations. Dr. DePalma's experience as a teacher has enabled him to present clearly defined concepts of treatment for almost every known type of fracture and dislocation. Practically every one of his instructions is further enhanced by line drawings.

Obviously, all medical students will appreciate this atlas, and it will have a place in all medical and hospital libraries. Physicians who are called upon to treat traumatic injuries perhaps should have copies of their own.

As might have been anticipated from the author's previously published volume, the section on shoulder injuries is valuable. However the other joints of the body are discussed no less thoroughly in this comprehensive work.

The author has followed the precept of proper alignment in the treatment of fractures. The text is enhanced by an abundance of illustrations. The various aspects of emergency care, including shock, blood loss, splinting and the proper use of plaster casts are all covered.

This volume is recommended to medical students, general practitioners and all other physicians dealing with fracture problems.—*Everett M. George*, M.D.

REGIONAL HEART COUNCILS SPONSOR INDIVIDUAL PROJECTS

This year, for the first time, the regional councils of the Iowa Heart Association have selected individual scientists whose work will be supported by funds collected in their respective areas. The list is as follows:

Northwestern Iowa Heart Council—*William B. Bean*, M.D., head of the Department of Internal Medicine at the University of Iowa, "The Ecology of Coronary Artery Disease," and *Kenneth M. Cook*, Ph.D., associate professor of biology at Coe College, Cedar Rapids, "Effects of Propylthiouracil on Reproduction in Rats."

North Central Iowa Heart Council—*George N. Bedell*, M.D., assistant professor of internal medicine at the University of Iowa, "Lung Function in Patients With Cardiac Failure."

Coon Valley Heart Council—*J. L. Ehrenhaft*, M.D., chairman, Division of Thoracic Surgery, University of Iowa Hospitals, "Experimental Surgical Research on the Heart and Great Vessels."

Central Iowa Heart Council—*Paul Willard*, predoctoral student at the University of Iowa, "Effect of Induced Deep Body Temperature on Certain Blood Factors Such as Carbon Dioxide and Oxygen Content, Acidity-Alkalinity, Electrolytes and the Effect of Various Carbon Dioxide Oxygen Mixtures Upon

These Blood Factors in Relationship to Survival of the Rat From Induced Deep Body Temperatures and the Resultant Cardiac Arrest," and also to *Dr. Bedell*, previously listed.

Cedar Valley Heart Council—*T. E. Rogers*, Ph.D., head of biology, Cornell College, Mt. Vernon, "Multiple Lead Systems for Vectorcardiography," and also to *Dr. Cook*, previously listed.

Mississippi Valley Heart Council—*William Connor*, M.D., assistant professor of medicine, University of Iowa, "Lipid Metabolism in Arteriosclerosis."

Southwestern Iowa Heart Council—*Drs. Ehrenhaft, Connor and Bedell*, all as previously listed.

South Central Iowa Heart Council—*Clifford Meints*, Ph.D., professor of chemistry, Simpson College, Indianola, "Physical Chemistry and Structure of Poly-D-Glutamic Acid Produced by Bacteria," and also *Dr. Bedell*, previously listed.

Polk County Heart Council—*John E. Gustafson*, M.D., Des Moines pediatrician and member of heart surgery team, "Studying Electrocardiographic Changes in Children," and *John W. Green*, M.D., of Des Moines, "Determination of Glutamic Oxalacetic Transaminase, Lactic Dehydrogenase and Pyruvic Transaminase in Patients Following Intracardiac Surgery."

Southeastern Iowa Heart Council—*Chen-shu Chang*, M.D., post-doctoral research fellow at the University of Iowa, "Measurement of the Destruction of Erythrocytes in Human Beings With Aortic or Pulmonic Stenosis and in Patients With Subacute Bacterial Endocarditis," and also *Dr. Ehrenhaft*, previously listed.

In addition to the various council-supported grants listed above, grants made by and supported by the state Heart Association include:

William E. Connor, M.D., assistant professor of medicine, State University of Iowa, Iowa City, "Advanced Fellowship for Work on Lipid Metabolism and Blood Coagulation in Atherosclerosis."

A. W. Horsley, M.D., cardiovascular research fellow, State University of Iowa, Iowa City, "The Role of the Peripheral Venous System in the Physiopathology of Shock and Congestive Heart Failure."

Wayburn S. Jeter, Ph.D., associate professor of bacteriology, State University of Iowa, Iowa City, "Studies on the Capsule of *Streptococcus Pyogenes* in Relation to Antigenicity of the Organism."

Frank C. Coleman, M.D., of Mercy Hospital, Des Moines, "Chemical Changes Occurring in Arteriosclerosis."

Charles H. Read, M.D., associate professor of pediatrics, State University of Iowa, College of Medicine, Iowa City, "To Study in Detail the Influence of Various Types and Amounts of Dietary Fat in the Relation to Pyridoxine Requirements in Normal Individuals, and to Compare the Pyridoxine Status of Individuals With Known Atherosclerosis With That of Apparently Normal Individuals."

E. O. Thielen, M.D., associate professor of internal medicine, State University of Iowa, Iowa City, "Study the Effects of Thyroid Hormone and Thyrotoxicosis on Muscle Contractility."



Mental Health

The Day-Hospital Concept in the Treatment of Children's Disorders

HOWARD V. TURNER, M.D.

DES MOINES

During the past 25 years, increasing attention has been given to a new mode of treatment for mental disorders—part-time hospitalization. An excellent non-technical historical review of the technic has been carried by the *KIWANIS MAGAZINE*¹ and has appeared in condensed form in the *READER'S DIGEST*.² Growth in the utilization of this plan was at first rather slow, following its introduction by Dr. Wardahl at Adams House, Boston, 25 years ago. Highly successful results more recently have been followed by rapid expansion in the use of the scheme, until at the present time probably 5,000 patients a year are treated in such programs. Operating in two or even three shifts, these programs make it possible for a patient to receive maximum treatment with optimal use of professional staff time and with minimum disruption of his usual activities. Uprooting the patient from his family and community life is minimized, and the consensus is that it is thus possible not only to treat more patients but to achieve better results with the patients treated. Accordingly, additional day-hospital programs are being planned throughout the United States.

In view of the highly successful results with adults, it is surprising that such a plan has not already been broadly applied in the treatment of children. An early attempt at the establishment of a pediatric program of this type was made in London by Dr. Joshua Bierer, one of the leading figures in the movement to establish day hospitals for adults, but no such facility was completed.

Perhaps one of the chief reasons for delay in this field has been that with fewer hospital programs available for children's work, there was less pressure for revision of those programs to allow for day-hospital services. Perhaps another factor has been the fact that intermediate steps between outpatient and day-hospital service have been somewhat easier to adopt in children's work than in adults' work. For example, several centers have begun the sponsorship of supervised nursery

schools in conjunction with their own therapeutic programs. Studies report considerable gains through part-time placement of very young children in a therapeutic educational atmosphere as an adjunct to outpatient management. An excellent description of one such program at the Judge Putman Memorial Center was described in the *AMERICAN JOURNAL OF ORTHOPSYCHIATRY* in 1949.³ In spite of these steps, the magnitude of the need for increased quantity and intensity of treatment services for the mental and emotional disorders of childhood is a matter of deep concern everywhere. Outpatient care, even though increased many fold, cannot provide adequate management for the more severe neuroses, psychoses and behavior disorders, for disorders complicated by convulsive difficulties, for central nervous-system damage, mental deficiency or physical disability, or for the many cases involving multiple disorders.

Hospital residence care does not seem to be the answer to the problem. This management is more expensive than most communities can support. It makes necessary the handling of a separation trauma on admission and on discharge, and it frequently increases the difficulty of dealing directly with the environmental aspects of the child's difficulty.

The development of a mode of treatment which would handle those cases not suitable for outpatient care and which, at the same time, would be less expensive than full-time inpatient treatment might open the way for greatly increased services on a local community level for the more seriously disordered child patient.

Work on such developments has begun. To date, we know of only two programs that are currently accepting patients on a full day-hospital basis. The plan at the Nebraska Psychiatric Institute, in Omaha, was an outgrowth of the full-time hospital program there, and at present it is available only to children who require post-hospital care. This program was initiated early in 1956. A similar arrangement, developing out of a full-time hos-

pital program, was initiated at the Dayton Receiving Hospital for Children.

THE PROGRAM BEING PLANNED FOR DES MOINES

Meanwhile, in 1954, the Des Moines Child Guidance Center began the study of a day-hospital plan designed to provide the most flexible program that could be integrated with its already existing outpatient program. The present plan was formulated early in 1955, and during that same year the Center began the work of securing the necessary funds and support for the operation of such a scheme on a pilot-project basis. Early in 1957, Mr. A. H. Blank, a community-minded Des Moines citizen and well-known philanthropist, made available to the Center the funds necessary for the construction of physical facilities designed specifically for a combined day-hospital and outpatient operation.

On completion of the building in 1959, the Center will establish a day unit with a capacity of 16 children. These children will be present at the center for approximately eight hours each day, returning to their families or usual home at the end of the day. This period corresponds with the one during which the professional staff of a residential treatment center ordinarily works with the patient, thereby making possible:

(1) extended psychiatric, medical and psychological observation, and the creation of experimental learning situations in a controlled physical and social environment

(2) treatment, including intensive psychotherapy, medical and nursing care, therapeutic education geared to the needs of each child, recreational experience within each child's needs, and satisfying social experience with adults and with groups of his peers.

It will of course be necessary to augment the Center's present staff in psychiatry, clinical psychology and psychiatric social work by adding appropriately trained workers in the fields of education, nursing and recreation. The program will have the valuable secondary effect of improving the Center's present training programs in clinical psychology, psychiatric social work and pediatrics, and may well make possible the development of training programs in additional fields.

Experience at the Center regarding the balance of cases for observation and for extended treatment, and regarding the length of service required for each, has indicated that the capacity of 16 children at a time will permit the provision of day-hospital care to between 80 and 100 children annually.

The Center will continue operating its outpatient service, which carries approximately 400 children each year. Those who are to receive day-hospital service will be selected from those who, in the clinical judgment of the staff members, are suffering from severe neuroses, psychoses, severe behavior disorders, and disorders complicated by central nervous system damage, convulsive condi-

tions, mental deficiency or physical disability and varied multiple disorders.

Since the demands for service can be expected considerably to exceed the Center's capacity, a corresponding number of children being carried as outpatients—those whose initial clinical conditions parallel those of the day-hospital patients—can be selected for future comparisons of progress.

The condition of each child receiving day-hospital service and of each child in the comparison group will be evaluated at the time of application for service and upon discharge or completion of treatment. The evaluation will be repeated for each child as a follow-up, after an appropriate length of time has been permitted to elapse. Tentatively, a 12-month period has been selected. The evaluations of condition will include:

(1) Behavior descriptions from family physician, family and teachers

(2) Developmental, medical, social, and academic history

(3) Medical examination, including special neurological techniques where indicated

(4) Clinical psychiatric and psychological examinations

(5) Standardized measures of intellectual functioning and academic achievement

(6) Scale for rating improvement and other changes in condition based upon the pooling of the staff clinicians' judgments

(7) Formal diagnosis in accordance with the American Psychiatric Association's *DIAGNOSTIC AND STATISTICAL MANUAL OF MENTAL DISORDERS*.

Over a five-year period, this plan will yield sufficient data to permit analysis of the relative effectiveness of the day-hospital service, as compared with that of outpatient treatment, in terms of (1) proportion of improvements achieved; (2) stability of improvement; and (3) time span and total professional time required for improvement.

The data will, in addition, provide information on the types of disorders most suitable for day-patient treatment. Similar comparisons will be made between day-hospital patients and inpatients.

The present project should determine the clinical soundness and economic feasibility of such a plan. If successful, and all available evidence indicates that it will be, this project will serve as a pilot operation for the development of such programs elsewhere. Furthermore, techniques and procedures developed in this day-patient setting will open to investigation some problem areas in pediatric mental health work which are not now susceptible to attack through well-controlled research methods.

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1. Maisel, A. Q.: Part time hospitals for mentally ill. *Kiwanis Magazine*, vol. 43, No. 2 (Feb.), 1958, pp. 21-22.
2. Condensation of the above. *Reader's Digest*, March, 1958, p. 69.
3. Rexford, E. N.: Role of nursery school in child guidance clinic. *Am. J. Orthopsychiat.*, 19:517-524, (July) 1949.

* Expenses for this operation, personnel, and statistical operation to be supported by a grant from National Institute of Health special projects fund.

Blue Shield States Its Case

The Young Physician's Stake in Blue Shield

JAMES E. BRYAN

STAMFORD, CONNECTICUT

WHAT IS "BLUE SHIELD"? What does it do for me and my patients that no other organization can do? Why is the medical profession particularly interested in Blue Shield? Why should I become a "participating physician" in my local Blue Shield plan?

On the day you enter private practice, you'll probably be invited by a Blue Shield representative or by your county medical society to "join" your local Blue Shield plan as a participating physician. You'll be given detailed information about the local plan's benefit provisions, its fee schedules and specific procedures—all of which vary to some extent among the plans.

In this article, however, we'll try to answer the general questions we've posed above, and to outline some of the reasons why Blue Shield—medicine's biggest and boldest public service program—should be of vital concern to you.

What is Blue Shield?

To put the answer in static terms, Blue Shield is the name and symbol of 75 local nonprofit medical care prepayment plans—all of them created and presently approved or sponsored by their local state and county units of the AMA. The common purpose of all these plans is to help the medical profession carry out its primary task of rendering the best possible medical care to all the people at the least possible cost to them.

THEY SAID: "IT COULDN'T BE DONE!"

In more dynamic terms, Blue Shield is a stupendous project—by far the biggest development in medical economics ever voluntarily tackled and successfully executed by the medical profession in any country in the world. And today, though it has enrolled nearly a quarter of the American people in less than 20 years, its ultimate job is far from accomplished.

When the first Blue Shield plans were born in 1938, the social theorists insisted that the medical profession could never do this job without the help of government. And, in a sense, they were right. For though the plans were initiated and underwritten by the profession, they have become *community* enterprises in which labor, industry and hundreds of leading lay citizens have played vitally helpful roles. It's not the govern-

ment, but the people who have helped the doctors build Blue Shield.

Blue Shield also represents the most dramatic phenomenon in America's insurance history. It is attacking a problem that leaders of the insurance industry said, 20 years ago, could not be solved by insurance methods.

And the insurance actuaries were right, too. For Blue Shield isn't just another insurance company. It is a direct agency of the physician himself—guided by the profession—and operated not for his profit, but to help the doctor's patients to avail themselves more easily of his services when they need them.

To qualify as a member of the national association of Blue Shield plans and to use the name and symbol of Blue Shield, each plan must meet these basic requirements:

- (1) be approved by the state or county medical societies of the area in which it operates;
- (2) operate on a not-for-profit basis;
- (3) maintain free choice of doctor for the patient;
- (4) maintain formal participation of at least 51 per cent of the eligible physicians in its area;
- (5) devote at least 75 per cent of subscription income to benefit payments (the national average is about 85 per cent), and
- (6) maintain a professional relations program and meet certain financial and reporting requirements.

TRUST FUNDS FOR MEDICAL CARE

From a subscriber's point of view, Blue Shield plans are the administrative mechanisms of 75 large "trust funds" supported by millions of people who regularly deposit small prepayments against the costs of their doctors' care if, as and when they need it.

Blue Shield differs from an insurance company in several important ways:

First, the policies and practices of the Blue Shield mechanism are evolved and determined by the profession itself. In fact it is the only major

This is the sixth of a series of articles discussing health insurance problems. The papers, some of them by Iowans and others by physicians from outside the state, are intended to provide a broad, factual base for really informed opinion.

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program in this field that is responsive to the profession as a whole, and without Blue Shield, the profession would have little or no voice in this area of medical economics.

Another vital distinction is Blue Shield's non-profit operation. This means its main purpose is not to make money for someone else but to facilitate medical service for its subscribers. The "profit motive" in Blue Shield is expressed in a relentless drive to return every possible cent of each subscriber's dollar to the Blue Shield member in terms of medical service.

This is equally important to the doctor, too, for it means that Blue Shield is trying just as relentlessly to make adequate payments to him within the limits of its subscription income. "Non-profit" in Blue Shield means essentially that the plan's earnings belong to the subscribers and are available to them to pay for their doctors' services.

A COMMUNITY PROGRAM

A third characteristic distinguishing Blue Shield from other insurance organizations is its social purpose. It was created by medicine to do what the profession itself traditionally has always sought to do—to meet the needs of the *entire* community.

Just as doctors serve rich and poor alike, so Blue Shield—"the doctor's plan"—seeks to enroll people of every class and condition, not just those select groups who, because of favorable age or income factors, offer the best prospect of profitable underwriting.

Blue Shield's subscription rates, generally speaking, are based on the "experience" (the needs and costs) of the entire population in the area served by each plan. This "community rating" means that some enrolled groups who are likely to require very little medical care are helping to support the cost of protecting less favored groups whose members require more medical care and are less able to pay for it. All insurance premiums are based on the experience of a certain group. But, Blue Shield, as a *community* service, takes the *whole community* as its base.

PREPAID SERVICE FOR THE PATIENT

A fourth major distinction of Blue Shield plans is that they make their payments directly to the participating physician, rather than to the patient, and, in general, the plans try to relate their payment schedules to the average fees commonly charged by doctors in the communities served by the local plans, for all but their upper income patients.

Thus the objective of Blue Shield is to provide patients in the medium and lower income groups with benefits in terms of *service*, rather than of dollars. And Blue Shield seeks to compensate the participating physician directly and sufficiently so that he will not have to look to the patient for supplementary payments.

This "service philosophy" is distinctive to Blue Shield, and the objective of providing prepaid *service*—rather than mere case indemnities that may be unrelated to the doctor's normal fees—is common to all plans. More than three-fourths of the plans serving 75 per cent or more of the total Blue Shield enrollment—have formalized the service benefit idea in written agreements with their participating physicians.

Under the terms of these voluntary agreements, the participating physicians have assured Blue Shield patients, through the plan, that they will accept the plan's scheduled payment as full payment for any service covered by the plan, whenever the patient's family income is not in excess of a locally stipulated amount (the median is \$4,000 individual and \$6,000 for the family) as approved by the sponsoring medical societies.

Even where the participating physician's agreement does not contain such a provision, Blue Shield tries to base its payments on the average fees actually charged by local doctors for their services to patients in medium and lower income brackets.

The service benefit idea offers the patient a reliable assurance that his payments to Blue Shield will actually cover the full cost of services covered by his Blue Shield contract. This brings great credit to the profession. It is distinctive to Blue Shield because it is in keeping with medicine's service traditions, and because the participating physician is willing to make such a commitment only to a prepayment plan whose fee schedules and medical policies are determined by the profession.

In the areas served by Blue Shield plans, approximately 80 per cent of local doctors are participating in their local plans, which indicates the confidence and support accorded by the profession to their Blue Shield plans.

SCOPE OF BENEFITS

We have mentioned the fact that each Blue Shield plan is locally controlled. Hence, the precise benefits available have varied considerably from plan to plan. At first, most plans limited coverage to in-hospital surgical cases; a few included obstetrics in hospital, and a very few offered limited coverage for hospitalized medical (non-surgical) cases on a per diem basis. Such additional services as anesthesia, surgery outside of hospital and consultations were paid for by a few plans here and there. Almost universally, diagnostic services and home and office visits (except possibly for emergency surgery) were excluded from Blue Shield coverage.

In the brief and crowded years of Blue Shield history, these plans have learned to do many things once considered impossible. Blue Shield operates on insurance principles, but its unique relationship to both doctor and patient has en-

abled Blue Shield to transcend many of the actuarial rules that apply to a straight insurance operation.

Recently the Blue Shield plans throughout the U. S. have been moving toward a more uniform pattern of benefits.

This tendency is inevitable in view of the trends both in labor and industry to negotiate social welfare and employee benefit programs on a national scale. While such groups do not ask for uniform schedules of payment throughout the country, they are increasingly insistent on having the same scope of benefits—the same eligible services—for their members everywhere.

Here is the general pattern of services that now seems to be pretty generally accepted among Blue Shield plans as a satisfactory basic scope of prepaid care:

Surgery, whether in or out of hospital, and without limitation as to the nature or number of procedures performed.

Obstetrical services, in or out of hospital, including the normal care of the newborn.

Care of the newborn, from date of birth, for all services generally eligible to older subscribers.

Medical services in hospital, from date of admission. Many plans extend these benefits up to 120 days or more, and some provide extra payments when the attending physician has had to make repeated or prolonged visits in a "crisis" situation.

General anesthesia service, in or out of hospital, by a physician anesthesiologist not employed by a hospital.

X-ray services, diagnostic or therapeutic; and *professional laboratory interpretations*, in or out of hospital, when rendered by a physician who customarily bills for such services.

Physical therapy, in a hospital, when administered by a doctor who customarily bills for such services.

This, essentially, is the common pattern of basic Blue Shield services, at least for "inter-plan" or national groups.

Beyond all this, Blue Shield has given national encouragement to all plans to develop a program of "extended benefits," or "major medical" as it is more commonly known in the insurance world.

While there are now some 800 insurance companies that provide cash benefits for accidental disabilities and sickness for some 70 million people, the Blue Shield plans are by far the most influential factor in the medical care prepayment picture. They pioneered the field; and the Blue Shield plans, through their close identity with the profession, have set the pace in evolving basic benefit structures and in developing schedules of payment acceptable to the physician.

All American physicians have a right to take pride in their achievement in building a strong Blue Shield movement. There is nothing quite like

it anywhere else in the world. For in no other major industrialized nation has the profession been able to forestall a governmentally operated compulsory health insurance program by a voluntary co-operative program on a nationwide scale.

But Blue Shield, big and important as it is, can never be bigger than the doctors who created it, and without whose participation the plan has nothing to offer. Blue Shield is big because medicine has a big job to do—a job that even today is only half done.

Recent events, such as the controversy over the Forand Bill to provide tax-supported medical and hospital care for old age beneficiaries of the Social Security system, show that the success of Blue Shield and the insurance industry in providing some type of voluntary insurance coverage for upwards of 120 million people has not put an end to the agitation for governmental control of medical care services.

There are some big jobs yet to be done, and the oncoming generations of physicians will soon have to take over the leadership in meeting new challenges that are only now taking shape in the field of medical economics. Nothing less than prepaid medical services, on a community-wide basis will do this job—and either it will be done through the voluntary leadership of the profession or we must be prepared to see our federal government take control.

Blue Shield is your own instrument, ready at hand for your use in applying the solutions that you will evolve. But just as you must learn to use the scalpel or the stethoscope, so you will have to learn to use Blue Shield, to understand its potentialities and its limitations, if you are to use it effectively in solving the problems of your time.

Blue Shield has done a great deal for medicine.

It has given the doctor a means of stabilizing his income by providing automatic compensation for services rendered a large portion of the people who otherwise would be completely unable to pay for their doctor's care.

It has brought into the service of the profession a whole new corps of first class administrators who are learning how to cope with the problems of medical economics in the service of the profession.

It has brought the economy of medicine into line with our 20th century capitalist economy by adapting to medical care the consumer credit mechanisms that have made possible our unequalled standard of living in America.

Through Blue Shield, the American doctor has shown that it is possible on a grand scale, and by strictly voluntary methods, not only to help his patients to prepay their medical bills, but at the same time to preserve the factors of free choice, fee-for-service, and the private patient-physician relationship—factors that are basic to good medical practice.

STATE DEPARTMENT OF HEALTH


COMMISSIONER

ENTEROVIRUS ISOLATIONS IN IOWA, 1958

County	Type	Number of Cases
Appanoose	Polio 1	1
Black Hawk	Polio 3	1
	ECHO 9	1
Buchanan	Polio 3	1
Fayette	Polio 1	1
Floyd	Polio 1	1
	Polio 3	1
Humboldt	Coxsackie B5	1
Jasper	Polio 1	1
Marshall	Polio 1	1
	Polio 3	1
Polk	Polio 1	3
	ECHO 9	2
	Coxsackie B2	3
	Coxsackie B5	1
Wapello	Polio 3	1
Warren	Polio 1	1
Washington	Polio 1	1
Webster	Coxsackie B3	1
	APC	1

As yet, the State Department of Health has not received information on the county of residence for the persons from whom the following viruses were isolated:

APC	1
Polio 1	3
ECHO 9	2
Polio 3	1
ECHO 4	1
ECHO 5	1
ECHO 8	1
Coxsackie B4	1
Coxsackie B5	1

The above is a list of all virus isolations reported to the State Department of Health for 1958. Two laboratories, the U.S.P.H.S. Communicable Disease Center Laboratories, at Kansas City, and Dr. Henry G. Cramblett's Research Virus Laboratories in the Department of Pediatrics at the S.U.I. College of Medicine, have reported these isolations. In a few instances, both laboratories examined specimens from the same patient, with the result that two of the poliomyelitis virus isolations were made by both laboratories. The

isolations not yet assigned to counties are among those made at Dr. Cramblett's laboratory in Iowa City.

In its poliomyelitis control studies, the State Department of Health attempts to follow every case that has been reported to it, whether paralytic, non-paralytic, unspecified or merely suspected, and to make sure that virus studies are performed. Since there is no official state laboratory to which specimens can be sent routinely, 35 paralytic and 39 non-paralytic cases were not studied. Laboratory specimens were obtained on about one-half of them.

It is to be noted that polio viruses of types 1 and 3 were isolated with about equal frequency from Iowa cases, and that there were no isolations of polio type 2. This experience accords with the findings throughout the United States, for very few isolations of type 2 virus have been made in the country as a whole. Either 1958 was an off-year for that particular strain, or the poliomyelitis vaccine has had a pronounced effect in reducing its prevalence.

Four varieties of Coxsackie (B2, B3, B4 and B5) were found. The State Department of Health made very definite attempts to study both Coxsackie and ECHO infections in Iowa during the year. It was particularly anxious to learn whether any of the ECHO infections had produced rashes, either early or late, but it was unable to find any concentrated groups of cases of either Coxsackie or ECHO for study.

The one APC virus isolated was found in Webster County in the course of a field study that was started in Fort Dodge in December, but it definitely was not the organism that caused the outbreak of illnesses there. It was isolated from a member of a family that had an illness including conjunctivitis and sore throat.

In spite of a constant alert, the Department was unable to find an adequate bunching of a half-dozen or more good cases of probable influenza for study by Dr. Albert P. McKee, director of the WHO Regional Influenza Laboratory in Iowa City. In November, his attention was directed to one localized outbreak in Grundy County. That illness seemed typical of textbook influenza. Dr.

McKee reports that he was unable to isolate any influenza virus, but isolated an unidentified virus, is studying it, and will report on it later.

From an outbreak in Guttenberg, numerous specimens were sent to the USPHS Communicable Disease Center Laboratories. The Department fully expected that an ECHO virus would be found—one of the type that produces a measles-type rash. Unfortunately, no virus isolations could be made from the group of specimens obtained.

In December, the Department's attention was directed to Fort Dodge, where the city health officer reported a large-scale outbreak of nausea, projectile vomiting, intestinal cramps, diarrhea and weakness. Though the illness might appear in persons of any age, the most severe cases were likely to be in patients less than three years old. These youngsters, having vomiting and profuse diarrhea for a day or two, first became dehydrated, then developed fever ranging up to 103°F. and required hospitalization. Older patients were away from work or from school for only a day or two. The attack rate was high, and probably a quarter of the population of Webster County contracted the illness. Secondary cases in families were numerous and indicated that the incubation period took up approximately one week. The curve of the epidemic was sharp—like an influenza curve on the upswing—but was much slower than an influenza curve in its recession. This outbreak was studied by joint forces of the Fort Dodge City Health Department, the Fort Dodge City Schools, the State Department of Health and the USPHS physicians from the Kansas City Regional Office. As stated above, at least one culture has yielded an APC virus. The preliminary reports from Kansas City indicate that many cultures are showing virus growth. The form of the virus has not yet been identified, although the usual Cox-sackie and ECHO types have already been ruled out.

1959

During the latter part of February, 1959, Dr. McKee was called to Roland by the city health officer there, to investigate an outbreak of typical influenza. He isolated Influenza Type B. This epidemic hit Roland with a rate of attack typical of influenza, and left the community in about two weeks without having spread appreciably to any of the surrounding areas. The State Department of Health cannot explain why an outbreak of Influenza Type B should hit one community in typical influenza fashion but fail to affect any considerable numbers of persons in neighboring communities. In Roland on the third day of the outbreak, 80 youngsters were absent from school out of a total enrollment of 360. Two days later another 100 youngsters had contracted the illness.

During February, Paton (Greene County) reported another rapidly spreading virus type of

illness in which manifestations consisted mainly of fever up to 103°F., headache and pain about the eyes. It was characterized by an absence of nausea, vomiting and diarrhea. Though prevalent generally in the community, it was severest in children. Because of the number of children attacked, the Paton Community Schools were closed for three days, beginning Wednesday. By Monday the illness had practically passed out of the area, and the schools reopened. Specimens (nose and throat washings, feces and blood) were collected, and they are also being studied at the Communicable Disease Center in Kansas City.

MORBIDITY REPORT FOR MONTH OF FEBRUARY, 1959

Disease	1959 Feb.	1959 Jan.	1958 Feb.	Most Cases Reported From These Counties
Diphtheria	1	0	0	Scott
Scarlet fever	542	174	186	Allamakee, Buchanan, Johnson, Polk
Typhoid fever	0	1	1	
Smallpox	0	0	0	
Measles	2714	1630	408	Cass, Dubuque, Franklin, Polk, Scott
Whooping cough	17	13	3	Cherokee, Scott
Brucellosis	12	17	10	Story
Chickenpox	691	389	748	Dubuque, Linn, Polk, Pottawattamie
Meningococcic meningitis	3	2	2	Cerro Gordo, Polk
Mumps	296	362	983	Buena Vista, Cerro Gordo, Polk
Poliomyelitis	0	9	1	
Infectious hepatitis	16	4	18	Dubuque, Pottawattamie
Rabies in animals	14	18	15	Jones
Malaria	0	0	0	
Psittacosis	0	1	0	
Q fever	0	0	0	
Tuberculosis	22	33	38	For the state
Syphilis	78	90	103	For the state
Gonorrhea	78	82	83	For the state
Histoplasmosis	0	6	0	
Food intoxication	0	0	0	
Meningitis (type unspecified)	1	0	2	O'Brien
Diphtheria carrier	1	0	0	Boone
Aseptic meningitis	1	2	0	Johnson
Salmonellosis	2	6	4	Polk, Pottawattamie
Tetanus	0	0	1	
Chancroid	0	0	1	
Encephalitis (type undetermined)	2	2	0	Carroll, Scott
H. influenzal meningitis	0	1	0	
Amebiasis	2	0	6	Cedar, Linn
Shigellosis	4	2	2	Louisa, Polk
Influenza	141	7	9	Polk, Story

COURSES FOR PUBLIC HEALTH NURSES

Because of the constant turnover in public health nursing staffs and because of the rapid progress that is taking place in medicine, nursing and the allied sciences, there is need for a continuous educational program for public health nurses. The Division of Public Health Nursing of the State Department of Health has long sponsored an active in-service educational program designed to orient new staff members, provide regular staff meetings and field trips, offer consultant services, distribute educational materials and sponsor institutes and workshops.

Regular staff meetings for county public health nurses and school nurses are held for the purpose of presenting new materials and discussing policies. Specialized nurse consultants, medical consultants and representatives of other health agencies are frequently secured as guest speakers for such meetings.

During the past year, a two-day institute on cardiac nursing was offered for public health nurses in Iowa. This meeting was planned in cooperation with the Iowa Heart Association. The need for additional and more detailed instruction in cardiac nursing responsibilities was recognized, and six regional conferences have been held throughout the state in cooperation with the Iowa Heart Association and state and local nursing organizations. Hospital nurses have attended those gatherings and have participated in the discussions of comprehensive patient care.

A two-day institute on the subject of vision was sponsored jointly by the Division of Public Health Nursing and the Division of Maternal and Child Health, of the State Department of Health, and the Division of Special Education of the State Department of Public Instruction. Seventy-five public health nurses and special-education supervisors attended.

Six years ago, the S.U.I. College of Nursing began to seek opportunities for placing its students in outlying towns to secure practical experience in community nursing. Since that time, 118 senior nursing students from S.U.I. have received experience in nursing in Iowa counties under the direct guidance of the county public health nurses. This is a two-month educational experience jointly planned by the teaching staff at the College of Nursing and the nursing staff of the State Department of Health.

Since many of the public health nurses have home responsibilities which make it difficult for them to enroll in a public health course at a university, it was necessary to bring some formal classes to them. As a result, the University of Minnesota has held extension courses in public health nursing in Mason City and in Des Moines during the past year. The total enrollment at both places was 108, and some of the nurses drove distances in excess of 100 miles to attend.

Plans are being made for a two-week course in human nutrition to be offered to public health nurses this summer at Iowa State College, in Ames.

ACCIDENTAL POISONING CASES
REPORTED BY
DES MOINES POISON CONTROL CENTER
SEPTEMBER, 1957—DECEMBER, 1958

BY TYPE OF SUBSTANCE INGESTED		
	Number*	Per Cent
Medicines		
Internal		
Aspirin	68	
Other analgesics	2	
Antihistamines	5	
Barbiturates	5	
Cough medicine	2	
Tranquillizers	2	
Laxatives	1	
Other	22	
	107	44.1
External		
Liniment	3	
Antiseptics	1	
Other	3	
	7	2.8
Household Preparations		
Soaps, detergents, etc.	15	
Disinfectants	7	
Bleach	5	
Lye, corrosives, drain cleansers, etc.	2	
Others	10	
	39	16.1
Pesticides		
Insecticides, including moth balls	19	
Others	11	
	30	12.3
Petroleum distillates	15	6.2
Cosmetics	11	4.5
Paints, varnishes, solvents, etc.	11	4.5
Plants	3	1.2
Miscellaneous	15	6.2
Unspecified	5	2.1
TOTAL	243	100.0

BY ROOM WHERE SUBSTANCE WAS FOUND†		
Room	Number	Per Cent
Kitchen	54	29.5
Bedroom	32	17.5
Bathroom	26	14.2
Living Room	15	8.2
Basement	12	6.6
Dining Room	8	4.4
Out of Doors	8	4.4
Garage	5	2.7
Porch	4	2.2
Hall	1	0.5
Other	18	9.8
TOTAL	183‡	100.0

† Based on 189 cases with follow-up data.
‡ Excludes 6 cases for which room was not specified.
* Excludes 4 intentional ingestions (one silver nitrate and three aspirins).

Attend the Meeting of the
MIDDLE STATES PUBLIC HEALTH ASSN.
Savery Hotel, Des Moines
April 1-3, 1959



Woman's Auxiliary News



OUR PRESIDENT SAYS—

The unpredictable month of March roared into Iowa like a lion and brought a severe storm to all parts of the state. The wintery winds piled the snow in huge drifts that blocked the highways and isolated many communities. I boarded a train in Chicago late in the evening not long ago, expecting to be home at the time stated in the railway schedule, but when I awakened, I learned instead that our train was stuck in a snowdrift near Grinnell, and we were delayed there several hours. But time passes swiftly for busy people, and I know that by the time this letter is published, the wintery winds will have become balmy breezes, and early flowers will be blooming.

The climax of our Auxiliary year is the annual meeting, and I am looking forward to seeing many of you in Des Moines on April 20 and 21. It is our golden opportunity to make new friendships and renew old ones. It is also our golden opportunity to join together in offering support to our husbands' profession. All doctors' wives are invited to participate in each of the convention events and to learn all about the Auxiliary's activities. Your state officers and the members of the Polk County Auxiliary have spent many hours planning a splendid program, and I am sure you will enjoy all of it.

A doctor's wife frequently is a spokesman for the medical profession, and therefore she should take pains to make herself effective both as an individual and as a member of an organization. Just as a doctor and his wife form a team, so do the medical society and its Auxiliary form an unbeatable combination for the accomplishment of whatever needs doing. As an Auxiliary, we want to grow steadily, look for opportunities to serve, and be loyal to the medical profession. To accomplish these goals, each doctor's wife should inform herself on the affairs of the day, especially those affecting the medical profession, adopt a point of view regarding each of them, and strive to win converts to that attitude. In our day, women no longer should be seen but not heard.

Payment of Auxiliary dues, though very necessary, is not enough. Every doctor's wife needs to work for organized medicine. First, she must gather information, and then she must speak up!

—MRS. H. C. MERILLAT

THE CHALLENGE

"Is the challenge of Americans today our refusal to accept a challenge? A country that has everything and will not live up to its responsibilities to the world is doomed."—James A. Pike

Elected officials, put into office with or without your help, are now meeting in Washington, in Des Moines and in your own towns. The ways in which they cast their votes for you will shape the destiny of your town, your state and your country. Have you been content to build a nest—to content yourself with economic security and creature comforts? Is it your impression that you "have arrived"—that your job is finished? Or have you despaired of influencing actions that are to be taken at the local, the state or the national level? Do you feel that you have little power to affect the course of things? Or, perhaps, have you been simply oblivious of the questions to which your fellow citizens are seeking answers?

Both in theory and in fact, all branches of our government are highly sensitive to opinions expressed at the grass roots. Active community groups are highly influential, and the attitudes which those groups take reflect the opinions of the most forceful individuals within them. If local problems exist that you feel you can help correct, do you make the effort to express your ideas at a meeting of your school board or your county board of supervisors? It is your right to do so. Do you favor some proposals that are being made in Congress or in the State Legislature, and do you oppose some others of the proposals? How recently have you written to or talked with your elected representatives?

The price of liberty is eternal vigilance! Now is the time for you to study the legislation that is under consideration at the state and at the national level. Decide for yourself whether each of them would be good for you and for your children. Talk to the individuals who have proposed the bills. If the bill is a good one, help them secure its passage. If it is bad, encourage the lawmakers who are against it, and enlist your friends to help you in your endeavor.

Remember that to get help in passing or defeating legislation in which you are interested, you must help others who are equally interested in proposals that are being made on other subjects.

Do you feel that a balanced budget is of tremendous importance to our national economy and to the well being of all Americans? Have you let your congressman and senators know how you feel? Now is the time to act!

Let's make our individual voices heard, and they will swell into a mighty shout demanding the preservation of individual freedoms.

—JANE KING

JANET ELLIS

Legislative Co-chairmen

CORRECTION

The program of the Annual Meeting of the Woman's Auxiliary, as it appeared in the March issue of the WOMAN'S AUXILIARY NEWS, contained an error: Dr. M. B. Emmons, rather than Dr. R. O. Emmons, will represent the ISMS Mental Health Committee in speaking on the topic "Volunteer Service for Psychiatric Rehabilitation" at 11:00 a.m. on Monday, April 20.

1959 ANNUAL MEETING

You will want to attend all of the activities scheduled for your information and entertainment at the Iowa Auxiliary's Annual Meeting April 20 and 21. Members of the Board of Directors are asked to be sure to attend the Board meeting on Sunday afternoon, April 19, and the Dutch-treat supper Sunday evening.

Mrs. K. F. Ritter, of Lima, Ohio, the representative of the National Auxiliary, and Dr. M. B. Emmons, representing the ISMS Mental Health Committee, will speak on Monday. On that day the meetings will adjourn early enough to permit members some shopping time. If you run out of shopping ideas, the style show Monday evening is sure to give you some new ones. Be sure to drop in at the Hospitality Room in the Savery during the evening this year—a new feature. There, you may have a cup of coffee, a game of cards or just a visit.

On Tuesday, information will be brought to you by several ISMS representatives. You will also want to be present for the awarding of prizes to



This picture of Mrs. John E. Gustafson, at her home in West Des Moines, illustrated a story about her in the series "The Woman Behind the Man," in the DES MOINES TRIBUNE. The almost innumerable trophies she is dusting are prizes her pediatrician husband has won at duplicate bridge, one of his chief diversions. Memories of a fifth-floor apartment in a New York walk-up building, and a drafty "Seven-Gables-type house" in Yonkers help her to savor the comfort and beauty of the home that she, Dr. Gustafson, Nancy (8), and Johnny (4) now occupy.

the Essay Contest winners, and to see the presentation of the Community Service Award to the woman selected for outstanding volunteer health service.

You won't want to miss the "Hats Out of This World" feature, either. Your Auxiliary president has additional information on this section of the program.

The ISMS banquet on Tuesday evening will be followed by the SPRING FROLIC—a social evening and dance sponsored for the benefit of the Woman's Auxiliary Educational Loan Fund (formerly the Nurses' Loan Fund). The entire proceeds from this dance will be used to help students interested in paramedical careers.

If you are unable to attend all of the meeting, please do plan to be present for as much of it as possible.

ATLANTIC CITY MEETING OF AMA AUXILIARY

A most cordial invitation is extended to all members of the Iowa Auxiliary to attend the June 8-12 annual convention of the Woman's Auxiliary to the American Medical Association. Headquarters will be at the Haddon Hall.

Registration will begin on Sunday, June 7, at noon. Monday will be taken up by a series of roundtable discussions, which are to replace the reports of national chairmen which previously were given at that time. Data posters on AMEF, BULLETIN circulation, membership and TODAY'S HEALTH (by state) will be on display, instead. In the afternoon, the annual tea honoring the president and president-elect will be held.

On Tuesday, June 9, there will be guest speakers from the AMA discussing important legislation, and a prominent Army officer will present an interesting and constructive program on survival medicine in national defense. The luncheon will honor national past-presidents.

On Wednesday there is to be a general meeting (until noon) and a luncheon in honor of the national president and president-elect. Dr. Gunnar Gundersen, the AMA president, will speak, and there will be a safety demonstration by the director of Chicago's Traffic Safety Board. Following the luncheon there will be a film program on Crusade for Freedom, mental health, and recruitment. Facilities will be available for showing slides of outstanding Auxiliary projects.

The annual dinner will not be held this year.

Reservations should be made with Dr. Robert A. Bradley, chairman of the housing committee, Convention Bureau, 16 Central Park, Atlantic City, New Jersey, on the form published in each of the recent issues of the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION. Because of the difficult housing situation in Atlantic City, reservations should be made as soon as possible. Mention the Woman's Auxiliary when you make your request.

NURSING CAREERS CONFERENCE

The Iowa Nursing Careers Committee is to sponsor an all-day conference, Friday, April 24, at the McNeal Motel in Des Moines. Directors of schools of nursing in Iowa, school nurses, Future Nurses Club sponsors and a pilot group of high school counselors have been invited.

The aim of the conference is to help develop "A Unified Front in Nurse Education." The theme of the meeting will be "What Are Our Recruitment Resources and How Are We Utilizing Them in Iowa?"

Some of the outstanding people who will attend as representatives of various areas in nurse education and who will participate in the conference are: Virginia Galbreath, R.N., head nurse in the Des Moines Public Schools; Elizabeth Kerr, R.N., consultant, Division of Vocational Education, State Department of Public Instruction; Margaret E. Killeen, M.A., field consultant, Committee on Careers, National League for Nursing, New York City; Janet G. Way, M.A., Iowa State Association of Women Deans and Counselors; and Mrs. H. C. Merillat, president of the Woman's Auxiliary to the Iowa State Medical Society, representing the Future Nurses Club sponsors. A panel made up of this group will be moderated by Mr. James A. Sheldon, director, Department of Adult Education, Des Moines Public Schools. Mrs. Arch E. Michel, of Des Moines, will be the luncheon speaker, and her topic "Express Yourself" is one that everyone who has occasion to address groups will find valuable.

Many general nursing-student recruitment problems are to be explored, and there will be discussions of the best way to coordinate recruitment activities in order to fill Iowa nursing schools to capacity with well qualified students.

Anyone interested in nurse recruitment is welcome to attend this conference.

Safety First

Traffic laws protect you—if you respect them.

SPRING FROLIC

Tuesday, April 21, 9:00-12:00

**Grand Ballroom—Hotel Savery
Benefit**

Woman's Auxiliary Health Educational Loan Fund

Bill Austin's Orchestra

**Standard Medical & Surgical Company will
sponsor the social hour from 8:30**

COUNTY AUXILIARIES

Black Hawk

Mrs. R. D. Acker and Mrs. Thomas Board presented the Black Hawk County Mental Health Center a check for \$1,100 on February 7. That sum was the proceeds from the "Tranquilizer Ball" that the Black Hawk County Medical Auxiliary had held on January 31.

Mahaska

The Mahaska County Medical Auxiliary met for a luncheon at the Downing Hotel, in Oskaloosa, on January 20. Mrs. L. F. Catterson, the president, presided. New officers were elected and state convention delegates were appointed.

Plans were made to celebrate Doctors' Day on March 30 by giving each doctor in the county a red carnation, and having a dinner at the Elmhurst Country Club that evening for all doctors and their wives.

The president for the coming year is Mrs. Joseph Lederman.

Polk

The Polk County Medical Auxiliary met at the Standard Club for luncheon on Friday, March 13. Mrs. John Bakody presided at the business meeting. The hostesses were Mmes. Robert Foss, James Dickens and C. J. Peisen. Miss Hannah Nollen presented a most interesting program.

Pottawattamie

On February 10, the members of the Pottawattamie County Medical Auxiliary entertained their husbands at a Mardi Gras costume party in the Hotel Chieftain, in Council Bluffs. The costuming was so successful that many of the doctors and their wives were as thoroughly disguised as if they had worn masks. Prizes were awarded to Mrs. Ralph L. Hopp, who wore the floor-length kimono of a Chinese lady, and Dr. Harold Trafton, who was made up as a little boy.

Woodbury

In conjunction with the meeting of the Sioux

Worth

Valley Medical Association, in Sioux City, February 24-26, the Sioux Med-Dames entertained the wives of visiting doctors at a luncheon and style show.

The Worth County Auxiliary members met with their husbands for dinner at Hazel's Tearoom in Northwood, on Sunday evening February 8. Afterwards, the County Medical Society and the Auxiliary each held its meeting in the home of one of the members. The Auxiliary elected Mrs. C. T. Bergen, of Northwood, as its president. Mrs. B. H. Osten was made vice-president; Mrs. M. P. Allison, secretary-treasurer; Mrs. Florynce Westly, historian; and Mrs. Russell Olson, chairman of TODAY'S HEALTH. It was voted to send \$1.00 per member to the AMEF this year. It was also agreed, tentatively, that the members will entertain their husbands at a pot luck supper in one of the members' homes the latter part of March in observance of Doctors' Day.

A CORRELATION BETWEEN MARRIAGE AND LONGEVITY

Married people, on the average, live longer than single ones, according to Parke, Davis & Company's monthly statistical review PATTERNS OF DISEASE. In 1957, the death rate for single men was about 75 per cent higher than for married men, and the rate for single women was about 50 per cent higher than that for married women. Tuberculosis, in 1957, killed four single men for every married man, and two single women for every married one. Similarly, the influenza and pneumonia death rates were thrice as great among single men and twice as great among single women, as among married men and women. Other causes of death approximately twice as prevalent among single men as married men are peptic ulcer, cirrhosis of the liver, motor-vehicle and other accidents, and suicide.

People today are marrying at earlier ages than formerly, PATTERNS reveals. The average woman in the United States marries for the first time at around 20 years of age, and the average man at around 22. Seventy-five per cent more men in the 18-24 year age group were married in 1958 than in 1940. Venturing an explanation, the editors of the publication say: "Opportunity for women to work has removed one of the traditional obstacles to marriage for men—that of having insufficient income to support a family." Today, about 30 per cent of married women are in the labor force.

WOMAN'S AUXILIARY TO THE IOWA STATE MEDICAL SOCIETY

President—Mrs. H. C. Merillat, 116 Lincoln Place Drive, Des Moines 12
President-Elect—Mrs. E. A. Larsen, Centerville
Secretary—Mrs. Wm. C. Shinkle, 307 49th St., Des Moines 12
Treasurer—Mrs. E. A. Vorisek, 6205 Woodland Rd., Des Moines 12

Editor of THE NEWS—Mrs. E. T. Burke, 601 S.W. 42nd Street, Des Moines 12
Asst. Editor of THE NEWS—Mrs. D. F. Crowley, Jr., 663 44th Street, Des Moines 12

President's Address

WALTER D. ABBOTT, M.D.

DES MOINES

EVERY SERVANT must render an account of his stewardship, and as I draw to the close of my term, I wish to render mine. This past year has been an active and somewhat turbulent one for the Iowa State Medical Society, but I point with pride to the considerable number of projects that have been undertaken, and in many instances accomplished, during that length of time.

Such achievements as have occurred during my presidency must be credited to my fellow officers and to the Society's committeemen and staff members, who worked in complete harmony and put in long hours, far beyond the call of duty.

Although this report will duplicate that of the Board of Trustees in some respects, I feel justified in stressing many serious and important points. This account of stewardship will cover five topics: (1) Major Projects; (2) Committee Achievements; (3) Special Events; (4) Staff; and (5) Finances.

MAJOR PROJECTS

Blue Shield. Heading the list of the Society's major accomplishments during the past year is the development of a fine working relationship between Blue Shield and Blue Cross. In brief, mutualization of Blue Cross-Blue Shield sales and public relations was consummated, and a new Department of Planning and Personnel was created. It also will operate on a joint basis.

Needless to say, operational changes of this magnitude cannot be effected without meticulous planning and concerted effort. Your Board of Trustees spent untold hours in strengthening the relations between Blue Shield and Blue Cross, and has appreciated having opportunities to provide counsel to the officers of Blue Shield. Now, the relations between the Society and Blue Shield, and accordingly between the Society and Blue Cross, are the best that they have been since the plans were formed.

Medicare. The Society has continued as the fiscal agent for the Department of Defense in conducting Medicare affairs in the State of Iowa, and has paid \$291,876.81 to Iowa physicians during the past year. It has been recommended that the existing Medicare contract be extended for a period of one year.

Joint Council on Health Care for the Aged. Last summer the State Medical Society invited representatives from the Iowa State Dental Society, the Iowa Hospital Association and the Iowa Nursing Home Association to meet for the purpose of forming the Iowa Joint Council on Health Care for the Aged, patterned after the national council of similar name. It is my understanding that ours

was the first state council of its type formed in the nation, and that it has served as a model for similar councils in other states. A report of its activities has appeared in the HOUSE OF DELEGATES HANDBOOK as a part of the report of the ISMS Subcommittee on Chronic Illness. The Iowa plan was explained at a national meeting on health care of the aged, in Chicago during February, by a representative from each of the member organizations in Iowa.

Disaster Planning. The ISMS was the moving force that prompted the Iowa Interprofessional Association to assume responsibility for forming and activating community disaster committees. Your Society began this work, and when tentative plans for an Iowa program had been decided upon, the work of putting them into final form and carrying them out became the responsibility of the Iowa Interprofessional Association and the Iowa Civil Defense authorities. The Society has continued its interest in this activity, and will work toward keeping this essential project alive.

May I call your attention to the fact that there is a 200-bed emergency hospital on display on the lower level of this auditorium? It is indicative of the splendid cooperation that has been given by all of the participants in the disaster-planning project, and it deserves your careful examination.

Blood Banking. The ISMS Blood Banking Committee has completed the formation of the Iowa Association of Blood Banks, in keeping with the recommendation made by the House of Delegates in 1958. The constitution and by-laws for the new organization are now being prepared.

Educational and Scientific Trust. On authority of the House of Delegates, the Society is working toward the establishment of "an educational and scientific trust." You will recall that the House of Delegates approved the forming of such an institution at its meeting last April. Its purpose is to further educational, scientific and charitable work in the field of preventive medicine and public health.

Legislation. Since the first of this year, the ISMS Committee on Legislation, the officers of the Society and the staff have worked daily to keep informed on bills that have been introduced in the Iowa Legislature relating directly or indirectly to health care. They have also followed the bills introduced into the 86th Congress that pertain to health. It goes without saying that during a legislative year, a considerable burden is placed on the members of your Legislative Committee, the officers of your Society, your Legislative County Contact Men, and accordingly, on your staff.

Regional Meetings. The Trustees recommended to the House of Delegates last April that the Fall Conference of County Society Officers be replaced by regional meetings at which the problems and projects of the State Society might be taken to all Iowa doctors in or near their home communities. With the approval of the House of Delegates, Blue Shield was asked to cooperate in this grass-roots educational program, and 25 such meetings have been conducted throughout the past year. The attendance totaled 641 physicians and 238 physicians' wives. Auxiliary members were not included in all of the meetings. A word of commendation is due to the Society's staff members for their untiring efforts in helping the councilors set up these many gatherings within a limited period of time. Also, our thanks are due to the officers of the State Society and Blue Shield, and staff members of both organizations, who traveled many, many miles, sometimes in the late hours of the night or early in the morning before and after participating in these programs.

Special Meeting of the House of Delegates. As you know, the ISMS House of Delegates was called into special session less than two months ago, on 30 days' notice. At that time, the House congratulated the staff for the fine and thorough job it had done in organizing and disseminating information on the subjects that the House was to consider at that time, but I wish to add my own acknowledgment to the staff for the fine work it did under those emergency circumstances.

The actions of the House of Delegates at that special session have been reported to you through an ISMS NEWS BULLETIN, and the minutes have been published in the April issue of the JOURNAL. The committees responsible for carrying out the actions of the House of Delegates will present reports of their progress at this meeting.

Vendor Payment Program. The Subcommittee on Medical Services to the Indigent began work on the Vendor Payment Program last September. After the Executive Council had approved the plan, it fell to the Board of Trustees to put it into effect.

Needless to say, we have sailed through some rough waters. The House of Delegates, meeting in special session, voted temporarily to tolerate but to disapprove of the Vendor Payment Program. In taking that action, it asked for further negotiations with the Department of Social Welfare. The House directed that an appropriate committee arrange for a system whereby (1) the program would be conducted in a manner that would assure the maximum possible amount of local control, or (2) the vendor funds might be allocated to private voluntary health insurance systems for coverage of persons entitled to government assistance of this sort. These areas have been explored, and the appropriate committee will report its findings to the House of Delegates.

Annual Meeting. The staff has worked closely with the officers of the Society, following the directions of the House of Delegates, in planning this

year's annual meeting. In my opinion, an excellent format and program have resulted.

Iowa Unit Fee Index. The IOWA UNIT FEE INDEX, a revision of the earlier IOWA RELATIVE VALUE SCHEDULE, has been prepared and distributed to members of the Society. This INDEX is used as the basis for the Society's negotiations with Medicare, with the Department of Social Welfare, with Blue Shield, etc.

Physician Distribution Survey. The first stage in a comprehensive survey of physician distribution in Iowa has been finished. In it, a tabulation has been made of the number of doctors of medicine in practice and the ratio of physicians to population for each Iowa county for each of the years 1932 through 1958. This information was requested by the Committee on Legislation for its use in the Iowa Legislature. During the coming months, supplemental data will be gathered so that, county by county, the figures can be broken down to show the number of physicians in private practice and the numbers who are engaged in general practice and in each of the specialties. That information, along with data on the ages of doctors now in practice in each county, on the medical schools from which they graduated, and where they interned or served residencies prior to entering practice here, will provide the Society a factual basis for its attempts to make sure that adequate medical care continues to be available throughout the state in years to come.

As I understand it, a supplemental report of the Committee on Education and Hospitals is to be presented during this meeting, containing some pertinent facts on this problem that have been gathered by the administration of the S.U.I. College of Medicine.

It is the feeling of the officers of your Society that one of the most serious problems we face today is that of physician distribution. It is believed that very serious consideration should be given to the development of a campaign—perhaps through the Executive Council and the Committee on Rural Health—to show good faith to the people of Iowa by attempting to keep medical services readily available to all communities.

The Journal of the Iowa State Medical Society. The JOURNAL continues to improve from year to year, and we think it compares favorably with the publications of other state societies of comparable size.

Hospitality Suites at AMA Meetings. The ISMS joined with the other state medical societies in the North Central Conference in sponsoring a hospitality suite in Minneapolis during the Interim Session of the AMA last December. We believe it was a very worthwhile project, and from all reports it was a tremendous success. As has been reported to you on other occasions, the ISMS operates a hospitality suite of its own at annual meetings of the AMA, but it has not followed the practice of having one at the interim meetings.

COMMITTEE ACHIEVEMENTS

Most of the State Society's committees were active during the past year. Here are some of their most important contributions.

Committee on Medical Service. This group has been responsible for the operation of Medicare and has coordinated the work of four subcommittees.

Subcommittee on Prepaying Medical Care. This Subcommittee originated the proposals for the new Blue Shield contracts, and performed the initial study of the report of the AMA Commission on Medical Care Plans. In addition, it has served as liaison between the Society and the Health Insurance Committee of the private insurance industry.

Subcommittee on Medical Services to the Indigent. As I have already said, this group developed the Vendor Payment Program.

Committee on Medical Education and Hospitals. This Committee is developing plans for regional postgraduate courses similar to that which was held in Fort Dodge last year.

Grievance Committee. This remains one of the Society's most active committees. It has developed a special article explaining its functions and will distribute it not only to physicians but to public information outlets as well.

Public Health Committee. One of this group's major projects is the educational and scientific trust.

Public Relations Committee. This Committee developed the ISMS membership plaque, which the AMA Public Relations Advisory Committee has seen fit to approve and to recommend to other state medical societies throughout the country.

Health Education Committee. This group has sold 13 of its Medical Diary films to the AMA for use by other state societies.

Industrial Health Committee. Late last year, the Industrial Health Committee helped present the First Iowa Industrial Health Conference, and it has completed a report of the Iowa Industrial Medical Survey for future publication.

Committee on Mental Health. This group prepared a statement entitled "Standards for Mental Health Clinics" for publication in the JOURNAL, and devoted much time and effort to the establishment and maintenance of proper medical standards in mental health clinics throughout the state.

Committee on Rural Health. During the past year, this Committee was a co-sponsor and co-ordinator of the Third Iowa Rural Health Conference.

Committee on the Preceptorship Program. This Committee accomplished its objective of obtaining a preceptor for each junior medical student at the S.U.I. College of Medicine.

Medical Assistants' Advisory Committee. The men who compose this Committee helped to inaugurate two important programs—a placement service for medical assistants, which will be under the direction of the Iowa State Employment Service, and an in-service training program for medical

assistants, which will be directed by the S.U.I. Extension Department.

Fee Committee. As I have already said, this Committee published the IOWA UNIT FEE INDEX, and sent a copy to each member of the Society.

Automotive Safety Committee. This Committee has acted as a medical advisory to Mr. Russell Brown, the State Commissioner of Public Safety.

Committee on Nursing Education and Service. This group cooperated with the Iowa League for Nursing and the Iowa Nurses Association in conducting a survey of nursing needs in Iowa.

Committee on Group Insurance. This Committee completed a study of group life insurance offerings, and recommended a proposal to the Society. It received approval, and is now in the process of being underwritten.

Committee on Paramedical Services. This group has directed its efforts toward arranging for the voluntary registration of physical therapists and other paramedical workers and opposing, at this time, their licensure by government. The Committee was able to persuade the Iowa Chapter of the American Physical Therapy Association to shelve its bill to require the licensure of physical therapists.

Advance Planning Committee. This Committee helped in preparing the Society's statement regarding closed-panel medicine and free choice of physician.

SPECIAL EVENTS

Hawkeye Science Fair. Late in March, the Iowa State Medical Society was a co-sponsor of the Hawkeye Science Fair, along with Drake University and the DES MOINES REGISTER AND TRIBUNE. The Fair attracted outstanding high school scientists from throughout the state, and through the efforts of a tripartite executive committee, 175 exhibitors presented outstanding pieces of thought and work. As a result of the efforts of the three sponsors, trips, scholarships and other worthwhile prizes were available for presentation to the prize-winners. The Fair was an outstanding success, attracting more than 7,000 people, and gaining much favorable publicity for the Iowa State Medical Society as one of the co-sponsors.

AMA Outstanding General Practitioner Award. The ISMS staff worked closely with the AMA Communications Division in arranging the publicity that followed the election of Dr. L. A. Coffin, of Farmington, as the AMA General Practitioner of the Year. Earlier, upon instructions from the ISMS House of Delegates, your State Society's staff had developed Dr. Coffin's brochure, a document that was essential to his candidacy for the national award.

STAFF

At present, the ISMS staff consists of 13 people, though there have been as many as 14 in the Society's employ.

An executive director administers the business

affairs of the State Society and is responsible to the Board of Trustees.

There are two executive assistants. One of them assists the executive director in formulating public relations projects and is responsible for health education and public information through radio, press and television. The other is responsible for the maintenance of all membership records and for the purchase and supply of office material, as well as being staff secretary to the Woman's Auxiliary.

An administrative assistant is in charge of Medicare, is the Society's accountant and is, essentially, its office manager.

The managing editor of the JOURNAL is responsible for the preparation and publication of the JOURNAL, and also works on special research and writing assignments.

Two field secretaries are responsible for maintaining liaison between the headquarters office and the members of the Society throughout the state. They have also been presenting organized medicine's point of view on health legislation to the members of the Iowa General Assembly.

Six secretaries, in addition to performing regular stenographic duties, help carry out specific State Society projects.

All staff members have specific committee assignments. There are 43 standing and special committees of the Iowa State Medical Society, of which 233 physicians are members.

Words are inadequate to express my sincere appreciation for the loyalty and efficiency of your State Society's staff. One cannot fully know the quality of their work unless he has the privilege and opportunity of working with them.

FINANCES

It is my opinion that money matters are the prerogative of the chairman of the Board of Trustees.

Therefore, I shall leave it to him to report the financial transactions of the Society and to present the Board's recommendations.

CONCLUSION

This has been my account of my stewardship. There are parts of it that you may approve, and others that you may disapprove. Thank God we are living in America, where democracy flourishes and where a man may voice his thoughts with complete honesty and need fear no reprisal.

I urge you gentlemen to search your souls in reaching a considered opinion on the ways in which we can best extend and expand our care of the sick. Please don't let lust for the dollar, in all its ugliness, obscure your God-given responsibility as physicians. And don't let cunning politicians, with their nefarious schemes, divert you from your high principles, lest we physicians be divided and conquered!

We must not be stubborn in resisting all change. Rather, we must take the lead in assuring medical services to the least fortunate people in our society, even if in so doing we undertake some personal sacrifices. Actually, our only alternative is to submit to totalitarian measures under which we would be unable to fulfill our appointed function.

Our liberty can be maintained if we exercise caution, unselfishness and dignity, and if we realize that freedom can be preserved only through a positive approach to present-day problems. Thus, in the name of God, I beseech you to adjust your thinking to realities and to work together! As quarreling individuals, we are sure to let our beloved ship *Organized Medicine* flounder on the shoals of government control; as a unified crew, we can hold it to its accustomed course!

Conference on Laws Affecting Medicine

The National Society for Medical Research has called a meeting of people interested in the legal environment of medicine for May 27 and 28, on the campus of the University of Chicago.

Dr. Lester R. Dragstedt, a professor of surgery at the University of Chicago and currently the president of the National Society, points out that in 39 states one can will his automobile, his house or his bank account, but cannot will his own body to a medical school for research. In consequence, he says, scientists are facing a critical lack of materials for research in anatomy, pathology and organ transplantation. Physicians, researchers and lawyers are also confused, he says, over their legal rights and responsibilities toward human beings who serve in trials of new medical treatments. Such difficulties, of course, have always included

access to cadavers and obtaining animals for humane use in laboratories.

Invitations to the meeting are being extended to scientists, legal scholars, religious leaders and representatives of various other groups affected by the differing practices, decisions and statutes which Dr. Dragstedt says have "just growed like Topsy" over the years. The conference will attempt to reach agreements on ethical standards for the experimental use of human volunteers, cadavers and laboratory animals. An attempt will also be made to develop a model legal code to govern research in medicine.

Inquiries relating to the conference should be addressed to the National Society for Medical Research, 920 South Michigan Avenue, Chicago 5.

Health Problems in the Care of the Aged

JOSEPH G. MOLNER, M.D.

DETROIT, MICHIGAN

WE KNOW THAT SINCE 1930 the number of persons 65 years of age and older has risen 100 per cent, though the total population has increased only 35 per cent. At the present time there are nearly 15,000,000 people in the United States 65 years of age and over, or one out of every 12 persons, and since 1950 the increase per year of older persons has averaged over 350,000. By 1975, the total is expected to reach 21,000,000 over 65 years of age. During this past half-century, the proportion of these elderly people in our population has risen from 4.0 to 9.5 per cent and is still rising.

What are the reasons for this increase in the numbers of elderly people? There are three answers to this question: (1) improvement in medical care; (2) improvement in public health services; and (3) improvement in the standard of living.

Though life expectancy for the whole population has been increasing, the gain has been made almost entirely in infancy and childhood—not in the middle and later years of life. The person who is 65 today probably has no more than two or three added years of life expectancy than had the one who was 65 in 1900, yet there are larger and larger percentages of our population in the 65-and-over age bracket because of reductions in death rates at earlier ages.

Let's look at some of the factors which cause problems in the aged.¹

1. A lack of meaningful work and human contact may cause premature deterioration.

2. Many of the older age group are improperly nourished because they lack adequate knowledge of nutrition and/or eat poorly because they live alone.

3. The three-generation family has been superseded by the two-generation family because there is no room for the old folks in small homes and apartments.

4. The cost of medical care essential to health maintenance is in some instances beyond elderly people's means.

5. Some health insurance plans impose age limitations.

6. Those over age 60 experience a marked decline in income.

7. Elderly people have few opportunities to work. Technological progress has tended to limit employment.

8. There is a lack of appropriate legislation.

THE PREVENTION OF PREMATURE DETERIORATION

Thousands of the elderly people who are being supported at public expense in institutions can be rehabilitated and some of them can be enabled to reassume a productive role in society. Recent studies have shown that there is a correlation between the regaining of health and such factors as whether or not the patient has a home to go to, someone to care for him and a job at which to work. Too many of the aged are ill and senile only because they are lonely and frustrated. We can do much by encouraging the establishment of "senior centers." There is a need for more of these places where the aged themselves have a voice in determining what recreational facilities are to be provided. We need to plan *with* them, rather than *for* them.

We must make sure that money spent in health services for older people is well spent. In my opinion, it should be spent for diagnostic, rehabilitative and other services that will truly improve their health, rather than merely provide them custodial care.²

Dr. Rusk and others have amply demonstrated what can be done in rehabilitating patients who have had cerebrovascular accidents, Parkinson's disease, arthritis, etc., getting them back on their feet and to the place where they can be independent at least in the activities of daily living. Think of what that does both for the patient and for his family!

In one 27-bed nursing home in my town, we see the results of the real interest that the staff takes in these old folks. Though on admission these aged men and women are unhappy, and crippled by arthritis or paralyzed as a result of cerebrovascular accidents, they soon become happy, self-sufficient people as they attend daily exercise classes, are fitted with dentures and glasses, and receive the loving, tender care of the physician-owner and the nurses and aides.

THE IMPROVEMENT OF NUTRITIONAL STATUS

Elderly people, particularly those who live by themselves, must be enabled and encouraged to eat adequate meals. "Meals on wheels" were established in England shortly after World War II, and recently the idea has spread to a few cities in the United States. Such services deliver one hot and one cold meal daily to patients at home who cannot cook or shop.

Dr. Molner, the commissioner of health for the City of Detroit, presented this paper on September 22, 1958, at the Tenth Annual Meeting of the Iowa Academy of General Practice, in Des Moines.

BETTER HOUSING FOR THE AGED

Although there is no single *most desirable* type of housing for the elderly, provision should be made to locate them, wherever possible, in first-floor units of housing projects and to integrate them with young people there. The aged person should have the greatest degree of privacy possible, and should have either his own apartment or at least a private room in a boarding home. Recent studies of aging persons have indicated that the majority prefer to live in their own homes—alone if necessary. It's there that they are happiest. Their second choice was a home for the aged, and living with their children was their last choice.

HELPING THE AGED GET MEDICAL SERVICE

Medical services must be made readily available to the older population. Too often, medical care isn't really accessible to old people because they are too infirm or because it is otherwise too difficult for them to travel by bus or streetcar, and because they lack money to pay for other transportation.

A study made by the Commission on Chronic Illness revealed that persons 65 years of age and over had an average of four diseases each. That rate was 10 times as great as that which prevailed among children. Forty per cent of all substandard chronic conditions were considered to have been preventable, i.e., their progress could have been retarded.

In a recent survey of 241 aged residents of the Herman Gardens Housing Project, in Detroit, over half reported having had an illness within the preceding five years. The most frequent diagnosis was heart and circulatory disease. Most of the residents had had a medical examination within the last five years, but the majority had never had a hearing examination. Dentures were worn by 77 per cent, but 30 per cent needed dental attention either because they had lost or broken their dentures or because they had stopped wearing them for the reason that they didn't fit, and they couldn't afford new ones. One of the recommendations made by the people who conducted the survey was that medical care should be made easily accessible to the aged residents of the project.³

To be efficient, a health department must repeatedly reexamine and reevaluate its program in terms of total community needs and total community facilities, putting new emphasis on already existing programs and creating new services if necessary.

We know that the basic approach to chronic disease must be prevention.⁴ We know, too, that the physical, mental and emotional preparation for later life must begin in youth, rather than in middle life or old age when habits have become firmly established or when disability has already oc-

curred. For the aged, health too frequently becomes important only as it becomes poor health, and interferes with daily activities and the maintenance of independence. The aged person rarely expresses a need for preventive services. Findings in a Boston survey led to the suggestion that preventive services for older people should be approached from the point of view of integration with services that the patients considered well established.⁵

The chief killers and disablers of elderly people are coronary heart disease, cancer, cerebral hemorrhage, hypertension, diabetes, arthritis, nephritis and accidents. We must promote casefinding programs so that we can root out these killers and disablers. In this country at the present time, there are 26,000,000 people with chronic diseases, and 5,300,000 of them are significantly incapacitated. What can we do to prevent accidents and chronic diseases among the aged? Three out of four of the accidents injuring elderly people occur in the home, and falls are the major cause of temporary and permanent disability. Our goals must be to prevent the inception of disease and/or to halt its progress in the early stages through regular medical examinations.

HEALTH INSURANCE AND HOME CARE FOR PEOPLE
BEYOND 65

Only one person in four after age 65 has any hospital insurance, and after 75 fewer than one in seven has any. Insurance coverage for the aged after retirement, with increased benefits to meet the special health needs, would do much to alleviate the worries and concern of these older people when they become ill. Since 1940, there has been a marked increase in the numbers and varieties of agencies providing care at home.⁶ According to Dr. Dasco, approximately 70-80 per cent of the old people in New York could be cared for at home, if proper medical direction and auxiliary help were available. Interest in home care has become more widespread because of the increase in the numbers of the aged and because of the increased incidence of chronic illness.

As physicians, we could take the initiative in securing legislation to provide payment for rehabilitative care for the indigent, rather than the custodial care that is generally being given in nursing homes at the present time. In addition, there is a need for appropriate legislation to protect the aged against their own eccentricities and confused thinking, and to preserve their rights or in some instances the safety of the community, much like the laws that have been enacted for the protection of children. Too often, an aged person is pressured into signing over his property or other valuable belongings in exchange for lifetime care, and afterward finds himself without his property and without his promised care.

HELPING WORKERS PREPARE FOR RETIREMENT

Just how are we to prepare ourselves and to help others prepare for the period of leisure that comes at the end of several decades of productive activity? The problem is especially difficult because all our lives we have been taught that it is sinful to do nothing.

Since aging is a life-long process, we cannot prepare for retirement in just 10 or 12 easy lessons. We must start our preparations while we are still young. First, we must determine what our needs will be. Then we need to decide what we want to do in preparation for meeting them. During our employment years, we must do some financial planning, and we should begin participating in some avocations such as community projects, and recreational activities. Furthermore, we should learn some skills that have no connection with the work at which we are earning a living. Whenever an opportunity presents itself, we should urge other people to adopt similar courses of action.

We, and other people too, should have periodic health examinations throughout our working years.⁷ Dr. Wilbur Cohen, professor of public welfare administration in the School of Social Work at the University of Michigan, has expressed the opinion that the time to prepare for retirement is while one's children are growing up. Because we are now beginning to encourage persons of 40 or 50 years of age to plan for retirement, he believes we are going to do a much better job in the next 10 or 15 years than we have ever done before, even though planning for the future in a highly industrialized, urbanized society is more difficult than it was when the American family was rooted in the land and when the economic ups and downs were less sudden.

For a number of years, there has been a gradual shift underway from individual and family to community responsibility for providing retirement income. More years of life, with longer periods of retirement, mean that more savings will be required, the amount being dependent upon the standard of living that is desired and the willingness of the people to accumulate it for themselves or their effectiveness in getting their employers and/or the government to provide it.

The Detroit Edison Company has a mandatory retirement policy under which *all* employees must retire at 65 years of age, and under which they may retire at age 45 if they have had at least 15 years of service. At the age of 50, the employee is called in for a friendly personal interview and is given the booklet "Look Forward to Your Retirement." Thereafter, he is seen periodically in order that he may be given assistance in planning for the future. Upon his retirement, his hospital and life insurance plans continue as before, and he may continue his membership in the company's social clubs without paying dues. After retirement, the employee is seen once a year if he has re-

mained in the city, and if he has left for what he considers greener pastures, a friendly, personalized letter is sent him by the chief of the personnel department. Detroit Edison feels that its pre- and post-retirement counseling has aided its workers in making a good adjustment.

The federal government has shown increasing concern about the welfare of the aging population. One example of this interest is the following list of suggestions made to employers by the Department of Labor:⁸

1. Hire on the basis of ability, regardless of age.
2. Train and use older employees more effectively.
3. Retain older workers in employment as long as they are able and willing to work.
4. Review the provisions of pension plans which may restrict employment or retention of opportunities for the middle or older aged.
5. Help older employees prepare for a socially and economically secure and happy retirement.
6. Support and use the facilities and services of public and private agencies which can help older workers with their problems.

CONCLUSION

Ours is a young country with an accent on youth. We are well aware that the concentration of medical services on youth during the first half of this century has paid dividends in improved health and an increase in life expectancy. Until recent years, we haven't given much thought to the problems of the aging because, for the most part, it was possible for such people to be cared for by their families. But as the numbers of elderly people have increased, more and more of them have become dependent upon community facilities for care, and we have been faced with a new problem.

In older countries, such as the European ones, old age is respected and honored, and in times of crisis it is the elder statesman who is called upon to head the country.⁹ We in this country must increase our appreciation of the valuable contributions which senior citizens can make to our society.

We need to help people in our communities to understand the old folks, and conversely, we must help the old folks to understand the needs of their children and grandchildren. We know that the needs common to younger age groups are also common to the older people. We must recognize older men and women as individuals, and provide them opportunities for continued self-sufficiency and usefulness to the community.

Since health lies at the core of the problem of aging, the physician needs to feel more than sympathy for his elderly patient. A true empathy is needed. The doctor can be important in helping the oldster regain or maintain his self-esteem. He can help him get back into the stream of com-

munity life, or keep him there if he hasn't yet been cast to one side. Health for these older citizens will be improved through (1) research concerning the aging process and the diseases that plague elderly people, and (2) measures designed to make health services more readily available.

In my opinion, the physician has a singular opportunity to help solve this problem. He cannot do the job alone, but he can and should take the lead in doing it. If physicians and many social agencies—health, welfare, housing and employment—succeed in working together, the health and other needs of our growing elderly population can be met.

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Confidential Relationship of Physician and Patient

A recent appeal in the Supreme Court of Michigan emphasizes the importance the courts place on the prevention of any breach of the confidential relationship between physician and patient.

On January 24, 1956, the accused had been charged with the crime of gross indecency. The prosecuting attorney on February 23, 1956, requested that he be examined by three psychiatrists to determine whether he was a criminal sexual psychopathic person. The court granted the request and appointed three psychiatrists, approved by the State Department of Mental Health, to examine him in accordance with the procedure specified by the applicable statutes of the State of Michigan.

The examination was held in due course, and it appeared that a large part of the questioning of the accused was done by a Dr. Davis, using hospital records and notes made in connection with his prior consultation with the accused. These private consultations occurred after the accused had entered his plea of not guilty and had been released on bond, at which time he placed himself under the care of the physician mentioned above. Treatment apparently occurred in January, 1956.

The panel of psychiatrists found the accused to be a criminal sexual psychopathic person, and in May, 1956, the court so adjudged him, following a hearing before a jury. The accused appealed.

The main issue raised by the accused on the appeal was that the entire examination, and accordingly the report and opinion of the psychiatrists as given to the jury, was in violation of the physician-patient privilege as to communications between them, and thus in violation of his constitutional rights. The prosecuting authorities urged that the accused knew the identity of the three psychiatrists appointed by the court to examine him, and therefore knew that his own private psychiatrist was among their number. They ar-

gued that since he made no objection prior to the hearing, he therefore waived any privilege which he might otherwise have been entitled to claim as regards his private psychiatrist's participation. The trial judge had agreed with them when the issue first was raised during the trial. The prosecuting authorities also argued that the whole situation indicated that a clever trap was set up by the accused and his attorney by their failure earlier to object.

The appellate court in a unanimous decision reversed the finding that the accused was a criminal sexual psychopathic person and ordered new proceedings. It said in part as follows:

Perhaps such a trap was set, but if so it should be remembered that the successful operation of a trap requires a susceptible victim. The troubling claim of appellant that his constitutional rights were violated in permitting his personal psychiatrist to use confidential information in the psychiatric examination and in testifying for the People, is not answered satisfactorily by the prosecution's claim that it has been trapped. We do not find that appellant was under any obligation, prior to trial, to raise objections to the appointment of a panel of psychiatrists, and therefore his objection at trial to the testimony of the psychiatrists on the grounds that they were of necessity based in part upon confidential communications was timely. There does not appear to have been any waiver of the privilege. . . . The admission of the testimony of the three psychiatrists over the objection of the appellant was prejudicial error in that it permitted and in fact required the use of confidential information obtained by one of their number in the private consultation noted above. These communications by appellant to Dr. Davis were privileged, and the privilege was not waived even though appellant could have earlier objected to Dr. Davis' inclusion on the panel of psychiatrists. (People v. Wasker, 353 Mich. 447, Sept. 9, 1958.)

—Editorial, *NEW YORK J. MED.*, 59: 1243-1244, (Apr. 1) 1959, abbreviated.

Acute Coronary Disorders

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DURING THE PAST 35 YEARS, increasing interest has developed in diseases of the coronary arteries. This interest has, in fact, become so great that other diseases of the heart are failing to get as much attention as they deserve. The prominence accorded to coronary-artery disease has not resulted from any sensational new discovery, but has been the result of painstaking work throughout many years. Obviously, the widespread use of the electrocardiograph has helped greatly in making the diagnosis of coronary disease easier and more precise. It seems almost unbelievable that before the year 1918 comparatively little definite information regarding the coronary arteries, angina pectoris and coronary thrombosis was available. At the beginning of the twentieth century, angina pectoris was thought to be a disease of the aorta, and the coronary arteries were neglected for some time. The site of the structural disease in angina pectoris was a favorite subject for discussion and argument among the most outstanding men of the time. The coronary arteries returned to prominence as a result, principally, of the famous work done by Herrick in 1912.

CLASSIFICATION

As a result of our precision in the diagnosis of diseases of the coronary arteries, we can attempt a classification of these disorders. Many classifications have been advanced, but it must be remembered that the phases of angina pectoris are, as a rule, merely successive stages of one disease—a progressive atherosclerosis of the coronary arteries. Pain is the most outstanding and usually the first symptom of coronary disease, and its intensity provides us a fairly accurate guide in our analysis.

Pain and the possibility of sudden death are two features of angina pectoris that evoke fear—even terror and awe—from physicians and laity alike.

The following simple classification has proved most helpful to clinicians: (1) angina pectoris, (2) angina pectoris decubitus, (3) acute coronary insufficiency and (4) acute coronary thrombosis (occlusion). The disease takes varying periods of time in progressing from the first to the fourth stage.

In stage one, the so-called angina pectoris of Heberden, only simple measures are required for diagnosis and treatment. Stage two is quite similar to stage one except that the pain comes more frequently and on slighter provocation. Angina pectoris decubitus, which occurs when the patient is sitting or reclining quietly, may be classed as stage two. Stage three occupies a position between the angina pectoris of Heberden and acute thrombosis with myocardial infarction of Herrick. This is the phase that Master has called acute coronary insufficiency. It has a characteristic clinical course, the prognosis is clear-cut, and there are definite persistent changes in the coronary arteries at autopsy. In stage four—the stage when coronary thrombosis develops and there is a myocardial infarct extending through the myocardial wall—the diagnosis is usually made without any difficulty, and the treatment is fairly well standardized.

Since pain in the chest is the most significant feature of coronary disease, its presence requires careful analysis. It must not be taken for granted that chest pain is always due to angina pectoris or coronary disease. Other conditions must be carefully eliminated before the coronary arteries are indicted as the cause of the distress. Painful ailments such as pleurisy, pericarditis, pneumonia, aortitis, arthritis, aneurysm, neuritis and nervous anxiety syndromes, as well as gallstones, peptic ulcer, cardiospasm and hiatus hernia should all be carefully considered. Needless to say, the taking of

Dr. Murphy, a professor of medicine at the Marquette University School of Medicine, presented this paper on September 23, 1958, at the Tenth Annual Meeting of the Iowa Academy of General Practice, in Des Moines.

a careful history is the most important segment of this diagnostic survey.

STAGE ONE

Certain distinctive features characterize genuine angina pectoris. In stage one, the angina pectoris of Heberden, the coronary arteries exhibit few signs that pathologists can identify. This is the stage in which they have begun to lose their resiliency and elasticity, but tests such as electrocardiograms may reveal nothing. The pain of true angina is not just any kind of pain in the chest. Long-continued, stabbing, shooting pains are not significant of angina pectoris. The pain of true angina was first described by Heberden as a constricting one originating, as a rule, under the upper part of the sternum and radiating in some cases up to the neck and down the arms. The patient experiences a sense of fear, of imminent danger and even of approaching death. The pain may last from a few minutes to 10 minutes, and then disappears. It is provoked by exercise, emotional strain or excitement. The onset is sudden, and the relief that follows the ingestion of nitroglycerine is immediate. As a rule, many months elapse between the first attack and subsequent episodes. Often, the patient gradually progresses from the first stage into the more serious stage of coronary insufficiency. Coronary thrombosis is frequently the final stage. The recognition of this first stage is important because at that time it is unnecessary to incapacitate the patient completely and condemn him to the status of a cardiac invalid for the rest of his life. Neither is it necessary, at that time, to demand that he give up his employment, move to another part of the country or restrict his activities severely. However, it is necessary to ask him to modify his living habits, his occupation and possibly his social activities.

Treatment at this first stage, aside from the use of nitroglycerine, consists of prescribing a general slow-down. The patient's work program is important. If he has been doing two different jobs, he should be advised to give up one of them; if he has been working particularly hard at just one, he should be counseled to exert himself less strenuously for the present. Modification of personal habits is of primary importance. Although there is no unanimity among physicians about the use of tobacco by such patients, it is my own belief that it is best for them to stop smoking completely. In some instances, giving up coffee has proved helpful. Whether or not they should use alcohol is controversial. Some authorities believe it is advisable for them to use alcohol in moderation; others are against it. It has been my own practice not to recommend its use if the patient feels that he can get along just as happily without it. Adequate rest is mandatory. The physician must condemn the practice of smoking and drinking and playing cards until late hours, and then getting up early to take up a heavy work load.

There is common agreement that the overweight individual with angina must reduce. Since weight is an alterable factor in treatment, it should be given foremost consideration. On the assumption that atherosclerosis of the coronary arteries is commonly responsible for angina pectoris and allied conditions, the relation of cholesterol to atherosclerosis has been a popular subject for debate. The relationship between fat and cholesterol and coronary heart disease is too broad a subject for a short discussion such as this, but the following concepts are important and deserve mentioning:

1. The relationship between diet, cholesterol and and blood cholesterol has not, as yet, been fully elucidated, nor has the association of hypercholesteremia and atherosclerosis been completely formulated.

2. Sufficient evidence has shown that the blood cholesterol should be determined on every patient with coronary disease. If the blood cholesterol is high—for example 250 mg. or above—the diet should be low in fat and low in cholesterol, particularly for patients with proved family predispositions to atherosclerosis.

3. Every patient need not go on a low-cholesterol diet, but reduction in weight is obligatory in nearly all overweight angina patients.

4. Other factors such as a genetic one, morphological and chemical anatomy of the blood-vessel wall, arterial blood pressure, sex and other hormonal factors may also be involved. As the experts point out, atherosclerosis in all probability has no single cause.

Drugs have always been important in the treatment of angina pectoris, and sedatives such as bromides, phenobarbital and others have enjoyed prominence. More recently, Peritrate, papaverine and aminophylline, and other vasodilators are often used.

STAGE TWO

Angina pectoris of stage two, or angina pectoris decubitus, comes on while the patient is lying in bed at night, or when he is resting, and is always a serious condition. It leads one to believe that coronary occlusion or thrombosis is imminent, and experience proves that such a patient must be watched very carefully. As I have already said, stage two is really just an advanced period of stage one in which the coronary arteries are more inelastic, more thickened and narrower. Pain is brought on by slighter and milder exertion and even by emotional strain.

The treatment of angina pectoris decubitus follows closely the regimen outlined for stage one. There are, however, some differences, since the attacks are usually more frequent. It may be wise to have such a patient give up his occupation for a few weeks or longer, until the severity and the frequency of his attacks have subsided.

STAGE THREE

In stage three, the term *coronary insufficiency* has been used to designate the characteristic episode. Atherosclerosis causes a progressive narrowing of the arterial tree, but it stops short of completely plugging the coronary branch. Thus, the vessel retains some of its functional capacity, until some added factor aggravates the condition. In this stage the clinical features are more serious, and the pain is more prolonged than in stages one or two, but the manifestations are far less startling than are those of acute coronary occlusion with deep myocardial infarction.

There are other differences between acute coronary insufficiency and acute coronary thrombosis. For example, shock is not always present. The attack is less severe than in coronary thrombosis, but more serious than in angina pectoris stages one and two. The period of convalescence may take up two or three weeks, rather than twice that long as in thrombosis. Anticoagulants may be given, but they are not demanded in this stage. Recovery is usually complete, and the patient resumes his occupation within a comparatively short time. The death rate in this stage is relatively low compared to that in stage four. There may be a characteristic electrocardiographic pattern in occlusion and insufficiency. In occlusion, the electrocardiogram presents deep Q-waves and RST elevations progressing into T-wave inversions which persist for some time. In insufficiency, the electrocardiogram shows RST depressions and T-wave inversions that last several hours or days. Master and his associates found the characteristic electrocardiographic pattern of coronary occlusion associated with occlusion at autopsy in 95 per cent of the cases.

STAGE FOUR

In stage four, there is usually acute thrombosis or coronary occlusion with a deep-seated myocardial infarct. This is the most serious event that occurs in heart disease and the one that calls for most skill in treatment and management. When this stage develops, it is occasionally necessary to rule out pancreatitis, mesenteric thrombosis, dissecting aneurysm or acute surgical abdomen, but as a rule the diagnosis is fairly simple. The electrocardiogram in coronary thrombosis is usually of a very definite pattern, and it can usually be relied upon to confirm the diagnosis.

It is in this stage of the disease that there have been some rather recent advances in treatment and management: (1) anticoagulants in treatment; (2) the vasopressor drugs; (3) early ambulation; and (4) surgery. These will be discussed, rather than the automatic, routine treatment of the disease.

Regarding anticoagulants, the indications and contraindications for Dicumarol are fairly well established at the present time. Many clinicians believe that nearly all patients with coronary occlusion and myocardial infarction should have

anticoagulant therapy, Warfarin, "Coumadin Sodium," should be started at once. The prothrombin time is determined daily, and the starting dose is approximately 0.5 mg. per kilogram of body weight, or 15 mg. per day for an average-sized person. Anticoagulant therapy may be carried on for several months or even longer, depending on the individual complaint of the patient. It is my own preference to discontinue the anticoagulants after the patient leaves the hospital, unless adequate facilities are available for the proper determination of prothrombin times, and unless there is an indication for prolonged anticoagulant treatment.

The contraindications to the use of anticoagulants are: any hemorrhagic disease, any ulcerative lesion, enlargement or disease of the liver, any renal bleeding and endocarditis of any type.

Vasopressor drugs must be given first attention if shock is present. Norepinephrine (Levophed) in doses of 5.0 mg. per liter of 5 per cent glucose in water may be given intravenously two or three times a day if necessary. However, if heart failure is present or imminent, an intramuscular preparation such as Wyamine may be given. The use of blood transfusions in the treatment of shock of coronary thrombosis has passed its day of popularity.

Levine has been largely responsible for the early ambulation of such patients. He states: "Physicians at the present time are in a psychological quandary. The lay public expects patients with severe cardiac disease to be kept strictly in bed, for if cardiacs are to die, they should die in bed!" Physicians are fearful of the criticism which may arise if a patient is permitted out of bed with heart disease. However, on the basis of clinical investigation and experience, Levine believes that the patient should be permitted to sit in a chair after 24 hours, since the work of the heart is thus decreased, and the fluid will probably localize in the legs rather than in the chest and lungs when he is in that semi-upright position. In the legs, the fluid is likely to do less harm. Furthermore, the need for enemas and catheterization of the bladder is likely to vanish. It is my own practice to individualize the armchair treatment, since some patients will require longer bed rest than others. I keep the patient in bed for at least a few weeks, unless heart failure develops.

The psychological benefits and other therapeutic values of having the patient in a chair rather than lying prostrate in bed are well known. Earlier, I emphasized that fear plays a prominent role in disease of the coronary arteries and in its treatment. The physician's attitude should be calm but encouraging. Some physicians are so pessimistic that patients can sense despair in their very manner. This is to be condemned. Although the doctor must not be lighthearted in the face of a serious disorder, and although optimism can't take the place of good basic treatment, cheerfulness will prove beneficial to the patient.

Surgery as a means of therapy should next be

assessed. The well known technics are those of Beck, Bailey and Lillehei. The Beck procedure may be described as consisting of four stages: (1) mechanical abrasion of the pericardium and epicardium; (2) partial ligation of the coronary sinus; (3) coating the heart with powdered asbestos; and (4) grafting mediastinal fat to the ventricular myocardium. Beck points out that the problem is not one of bringing blood to the heart, but of distributing this blood, and it is his conclusion that many people who suffer coronary occlusions could benefit from this operation.

Many clinicians do not believe that surgery is particularly beneficial in the treatment of coronary artery disease. White, specifically, has given four criteria for surgery in the treatment of coronary insufficiency: (1) obstinate and crippling coronary insufficiency which does not respond to an adequate period of good medical management; (2) proof that surgery is superior to medical management; (3) histologic proof of the revascularization; and (4) low surgical mortality.

SUMMARY

The four stages of coronary disease have been described. Stage one requires only palliative treatment. Patients in stage two must be watched very carefully, for coronary thrombosis may be imminent. Stage three, known as coronary insufficiency, lies between angina pectoris and coronary thrombosis. Atherosclerosis of a coronary vessel causes progressive narrowing of the arterial tree, but stops short of the coronary branch. In stage four, coronary thrombosis, the prognosis is doubtful, and treatment requires great skill.

Surgery, diet and long-term anticoagulant therapy are the major methods of management in coronary disease today. Surgery may be helpful to those who do not respond to any other type of therapy. Overweight patients should reduce, and a low-fat diet is advisable for those with proved atherosclerosis or a strong familial predisposition to the disease. The use of anticoagulants should be on an individual basis, and is of particular value to those patients who fear surgery and who do not wish to diet.

Pulmonary Diseases in Children

M. E. ALBERTS, M.D.

DES MOINES

THERE IS A universal awareness that respiratory diseases constitute one of the major problems in medicine—especially in pediatrics. In the present discussion, I wish to confine my remarks to the pulmonary area, centering attention primarily upon the lungs and referring to the bronchial tree only as it may affect the total pulmonary exchange.

Pulmonary problems vary with the age of the pediatric patient. Some of these disorders are confined to the neonatal period; others are characteristic of older children. Furthermore, the clinical pattern of a given pulmonary disease is influenced by the age of the patient.

In the first four weeks of life—the neonatal period—the child is beset largely by mechanical or chemical (anoxic) situations. At that stage he may have primary atelectasis, hyaline membrane syndrome, congenital anomalies, or occasionally an infectious state brought about by prolonged labor with premature rupture of the membranes, or secondary to aspiration.

In the period from one month to two years of age—infancy—infectious states are the characteristic forms of pulmonary trouble. We must concede that there may be prolongations of some neo-

natal problems, but these are not common. As we shall note later, pneumonia is clinically unique in the infant in that the incidence is higher and the mortality greater than in other age groups, because of the increased proportion of toxicity and respiratory embarrassment.

Growth and development of the child beyond the second year brings him into an area of decreased problems, except that at puberty the major physiological adjustments which he has to make lower his resistance to chronic states such as tuberculosis and bronchiectasis.

THE CHEST EXAMINATION

It is important to consider the examination of the chest before concerning ourselves with the child's specific pulmonary problems. The youngster isn't always completely cooperative, and it is often necessary to postpone a part of the examination until he has fallen asleep. Observation of the chest will demonstrate the configuration of the thoracic cage, reveal the nature of the respiratory excursions, and provide evidence of retraction as well as of the presence or absence of cyanosis.

The nature of the respiratory excursion is different in children and in adults, and it is characteristically more abdominal or diaphragmatic during infancy than in the later years of childhood. If

Dr. Alberts presented this paper at a meeting of the Fayette County Medical Society, in Oelwein, on September 9, 1958.

the thoracic component is prominent in the infant (unless an abdominal disease is present), pulmonary disease is strongly suggested. It is not until the child approaches seven or eight years of age that he demonstrates the thoracic component more prominently. Furthermore, in the young infant and particularly in the premature infant, respiratory movements may be fairly irregular, intermittent, and variable in depth as well as in rate. In fact, the respiratory excursion may be nearly imperceptible when the infant is deeply asleep. Kravitz *et al.*¹ recently reported a study of the effect of position on the respiratory rates of premature and mature newborn infants. They related that the premature infant has a significantly greater respiratory rate in the prone position than in the supine. Mature infants demonstrate a slightly higher rate in the prone than in the supine. Furthermore, in the premature infant they found more irregularity of rate and amplitude of respiration in the supine position.

Chest palpation is infrequently used directly in the examination of a child, for an adequate evaluation of tactile fremitus requires more cooperation than the average child will give.

Percussion of a child's chest also has some extraordinary features. The strength of the percussion effort must be decreased because of the small volume of the thoracic cage. Direct percussion with the pads of the fingers is often more informative than is the time-honored striking of the middle phalanx of the left middle finger with the tip of the right middle finger. The child's chest wall is relatively thin, and an over-energetic percussion provides little information.

Auscultation, too, is often a problem with children. We are frequently asked, "How can you hear anything with all that crying?" One has to exercise a great deal of patience in attempting to evaluate the breath sounds of a screaming, kicking and most uncooperative child. Very young children cannot comprehend such commands as "Breathe in," "Breathe out," or "Hold your breath." Often it may help to suggest to the child that he pretend he is inflating a balloon. Again, it may be necessary to continue or confirm one's evaluation while the child is asleep. Then, it is especially important to use a warm stethoscope so as to lessen the possibility of awakening him. Incidentally, we have found it very helpful to envelop the bell of the stethoscope in a rubber nursing-bottle nipple from which the end has been removed. The soft rubber is more comfortable to the patient and also affords a close-fitting contact with his skin.

Breath sounds are relatively louder and harsher in infancy than in later life. This relative increase in intensity persists until the age of five or six years. Considerations of the characteristic breath sounds such as tracheal, bronchovesicular and the like, as well as the different types of rales, are just as important in children as in adults.

THE PULMONARY PHYSIOLOGY OF NEWBORNS

It is essential to review some of the physiologic considerations of pulmonary function briefly before turning to some of the disorders of the lungs. Much physiological change-over takes place during the first few moments of life, and any form of impedance or interruption may make the difference between life and death for the infant. During recent years, much informative investigation has centered upon the physiology of the initiation of breathing, but there are still many questions to be answered.

Respiration is not initiated at birth, but has been carried on for some indeterminate length of time previously. Experimental work has demonstrated a form of tidal flow within the respiratory tree for an unknown period before birth. It has been suggested that this intrauterine activity constitutes a conditioning process for extra-uterine respiration.

Much speculation has had to do with the roles of carbon dioxide, oxygen lack, and hydrogen ion concentration of the blood in the initiation of respiration, but the complete physiological explanation is not yet at hand. In the absence of the stimulus of anoxia, hypercapnia or acidosis, the alert newborn may begin to breathe for the same reason he cries—whatever that reason may be. His taking that initiative may be adversely affected by drugs, anoxia or trauma. The roles of carbon dioxide, oxygen and hydrogen ion concentration of the blood are different in the infant who has never breathed, in the infant who has taken several breaths, and in the infant who has lived for somewhere between one and two or three weeks. Prematurity also changes the picture. Normally, a vaginally-delivered term infant who hasn't encountered obstetric or anesthetic complications takes a breath within 5 to 10 seconds after birth, and continues breathing regularly thereafter. Early irregular breathing is a poor prognostic sign, though one must of course take into consideration the normal variations in the respiratory cycles of prematures and newborns.

Roentgenological examination of the chest provides the most valuable information on the pediatric patient. Portable apparatus should be avoided when consistent with the welfare of the patient, for the larger and faster machines provide much better films. During the subsequent discussion, I shall attempt to demonstrate some of the diseases of the pulmonary system in children by means of roentgenographic findings.

PRIMARY AND SECONDARY ATELECTASIS

A number of excellent studies of the structures of the fetal lung as well as of the lung in the premature and the full-term newborn have been reported. Potter² has shown that at 10 weeks' gestational age there is no definitive lung structure and that primitive bronchi appear as simple tubules. This state remains for about the first half of ges-

tation, until the fetus weighs 300-400 Gm. Histologically, these bronchial tubules are composed of cuboidal and low columnar cells. During the last half of gestation, vascularization occurs as the capillaries lying under the tubular structures gradually penetrate the primitive bronchi to form capillary loops. These capillaries emerge into the lumen between the cuboidal cells to mark the beginning of alveolar formation. Continued capillary growth is responsible for further development of the alveoli. When the fetus has attained a weight of about 1,000 Gm., even though many cuboidal cells remain for ultimate further growth, the lungs reach a state at which they possibly could function in extra-uterine life.

I mention this fetal development because there is some controversy in the literature about the possibility of telling from the presence of cuboidal cells whether atelectasis in the newborn is primary or secondary. In secondary atelectasis, some physicians suppose, the cells have been flattened out by initial respiration. Potter believes that the alveolar spaces are formed as the capillary ingrowth pushes the cuboidal cells aside so that capillaries eventually come into contact with air spaces everywhere.

Atelectasis is a state of airlessness of the lungs. The primary form is the one that is seen in the stillborn or in an infant who has made no respiratory effort. The lungs are solid and beefy-red in appearance. They will not float in water. The lungs have partially filled with air, but have expanded incompletely. On cross section, these lungs show beefy-red areas alternating with lighter air-containing areas. Secondary atelectasis may be associated with another finding which has been responsible, in part at least, for the pathology.

Now let us look at some cases of pulmonary disease in children. The first whom I wish to consider was a newborn who had been delivered by cesarean section. The operative procedure had been uneventful, and the infant breathed initially in a normal fashion. His airway was clear, and he was in good condition when he was taken to the nursery. Four hours later, however, the nurse reported that he was in distress. He had become progressively dyspneic and cyanotic. The respiratory excursion of the abdomen and chest changed from a synchronous expansion of the abdomen and chest to a thoracic effort with retraction. The airway appeared clear. The breath sounds appeared distant and muffled, and occasional fine rales could be heard. An x-ray of the chest (Figure 1) showed that the position of the diaphragm was unaltered. The lungs appeared granular or ground-glass-like throughout, an impression that was conveyed more pronouncedly by the lateral view (not reproduced here). The thoracic cage seemed a bit more expanded, in spite of relatively poor aeration of the lungs. The heart appeared normal in size and contour. This was a case of hyaline membrane syndrome.

Hyaline membrane syndrome is more commonly seen in prematures or in babies delivered by cesarean section, than in full-term, vaginally-delivered infants. There are two concepts regarding the etiology: the theory of aspiration and the theory of tissue edema. Factors such as weak cough and gag reflex, "oxygen poisoning" and the role of the vagus nerve have also entered into the controversy. Be that as it may, hyaline membrane syndrome is a serious situation for the newborn, but as a rule of thumb one can assume that if the infant has not shown signs of respiratory distress within five hours and if he remains alive after 36 hours, he will not die of the disease. Superimposed pneumonia is a complicating factor that may develop to alter the course.

At autopsy, the lungs of an infant who has died because of this syndrome appear liver-like, but of a darker purplish color. They do not float in water. Microscopically, the lung is essentially collapsed, but those alveoli and alveolar ducts that remain open are lined with a pink-stained homogenous material—the obstructive substance which prevents free passage of oxygen to the capillaries. Atelectasis is typically an associated finding.

As a means of prevention, newborn prematures and cesarean section babies are provided an op-



Figure 1. Hyaline membrane syndrome in a newborn infant.

timum environment for establishing good respiratory exchange. Oxygen and water mist ("Mistogen") is helpful. We have not been impressed by the need to add anything to the water. A clear airway is essential. Warmth and a minimum of handling are essential. Treatment consists of maintaining the same optimum conditions. Steps to avoid premature labor and careful consideration of the need for cesarean section delivery are also vital factors.

Let us now consider a post-mature patient in the nursery, a large newborn who has respiratory distress, with dyspnea and cyanosis. Behind these findings is a peculiar state of intra-uterine aspiration due to fetal distress secondary to senility of the placenta. The roentgen findings in the chest are unlike those of hyaline membrane syndrome, but resemble any other form of aspiration. There are coarse-streaked bronchial patterns fanning out to the periphery in varying degrees. The chest may appear over-expanded. There may be accompanying indications of emphysema, pneumothorax, irregularity of aeration, or areas of atelectasis. Superimposed inflammatory disease is a complicating factor. Treatment consists of optimum respiratory environment and antibiotics.

The two foregoing conditions, in general, vary

somewhat from the picture we see in an infant who is suffering from atelectasis. Primary failure of the lung to expand is one of the principal causes of death in premature infants within the first few days after birth. Primary atelectasis occurs during the first day of life, but secondary atelectasis due to bronchial obstruction may appear several days later. Physically, the infants demonstrate cyanosis in varying degrees, respiratory distress and, on examination, signs of poor aeration in localized or diffuse areas of the lung fields. Central involvement may be difficult to detect. Fine crepitations may be heard here and there. The roentgen film may show areas of opacity varying from multiple small areas to a nearly complete pulmonary involvement. Figure 2 demonstrates primary atelectasis in a newborn infant with major involvement in the right lung. Treatment consists of measures designed to provide a clear airway, as well as oxygen, water mist and general supportive measures as indicated. Some clinicians prefer to give these infants prophylactic antibiotics, but that procedure is controversial. If tracheal catheterization has been necessary, the resultant trauma to the trachea may dictate the use of antibiotics as an aid in minimizing secondary pulmonary infection.

CONGENITAL ANOMALIES

Many and various congenital anomalies may create pulmonary distress in the neonatal period. I should like to consider several of these, inasmuch as there are several representative cases to demonstrate. Congenital lung cysts make themselves evident, during the first four to eight days of life, by producing dyspnea and cyanosis. Segments of bronchioles having no alveoli dilate to form such cysts within a few days. A complicating factor is a superimposed pneumonia which may lead to empyema. The diagnosis is established by x-ray, and an anterior-posterior view in the upright position with arms up is best. The cysts may appear single or multiple. Solitary cysts are usually larger than multiple ones, and may be filled with secretions or air, or both. These cystic formations must be differentiated from the acquired cysts which may occur following staphylococcal pneumonia in infants, a condition in which a partial obstruction of the tiny bronchioles may produce areas of trapped air. Other possibilities to be considered in the differential diagnosis are diaphragmatic hernia and congenital lobar emphysema. In the latter condition, the etiology of which is unknown, air gets into a lobe (usually the upper one), and cannot get out. It is presumed that this is due to a defect in the cartilage of the bronchus. In some cases, however, there is evidence of obstruction by a localized redundancy of the bronchial mucosa, or a narrowing consequent to an enlargement of a bronchial vessel, to the presence of a large patent ductus arteriosus, to a misplaced left branch of the pulmonary artery, or even to an enlarged heart.



Figure 2. Roentgen film findings in fetal atelectasis.

Congenital lobar emphysema can be differentiated from cystic malformation by its large area of fine-textured clearness throughout the entire lobe due to over-expansion and the displacement of the mediastinum to the opposite side. Fluoroscopy reveals poor aeration of the involved lobe. Needling an emphysema does not relieve it. As with cystic malformation, surgical removal of the affected part of the lung is necessary.

Another type of congenital defect was present in a child who was 10 weeks of age when she was first seen by one of my associates. There was a one-day history of respiratory difficulty, choking and refusal of feedings. The findings at that time, clinically as well as roentgenologically, were of an upper-respiratory disease. However, the distress continued. Subsequent studies demonstrated a marked diaphragmatic hernia, with the intestinal tract displacing most of the left lung and protruding through the posterior mediastinum into the right chest. At the time of surgery for the correction of the hernia, it was found that there was also a duplication of the jejunum. As can be noted on the x-ray film (Figure 3), this condition could be easily confused with cystic malformation of the

lungs (Figure 4). This girl is now 11 years of age and is doing well.

ASPIRATION OF FOREIGN SUBSTANCES

Aspiration of foreign substances constitutes a problem peculiar to children. Milk, oil-base nose drops, foreign bodies, and oral or gastric secretions drawn into the respiratory tract commonly lead to lung infection. The roentgen findings are non-specific, varying from exaggerated markings and emphysema to pronounced patches of infiltration, lobar infiltration and collapse. Infants who aspirate in the recumbent position are susceptible to involvement of the right upper lobe. Prophylaxis is the greatest service that the physician can render, so far as this entity is concerned. He should urge the use of non-oil nose drops, prone positioning and keeping foreign objects out of infants' grasp.

Another form of pneumonia that is of particular interest in pediatrics is that which follows the ingestion of kerosene or some other petroleum hydrocarbon. Regardless of the type of hydrocarbon, the clinical aspects are much the same. In addition to his discomfort associated with the actual ingestion of the poison, the child may experience, after a few hours, increased pulse and respiratory rates and a fever. Central nervous system in-

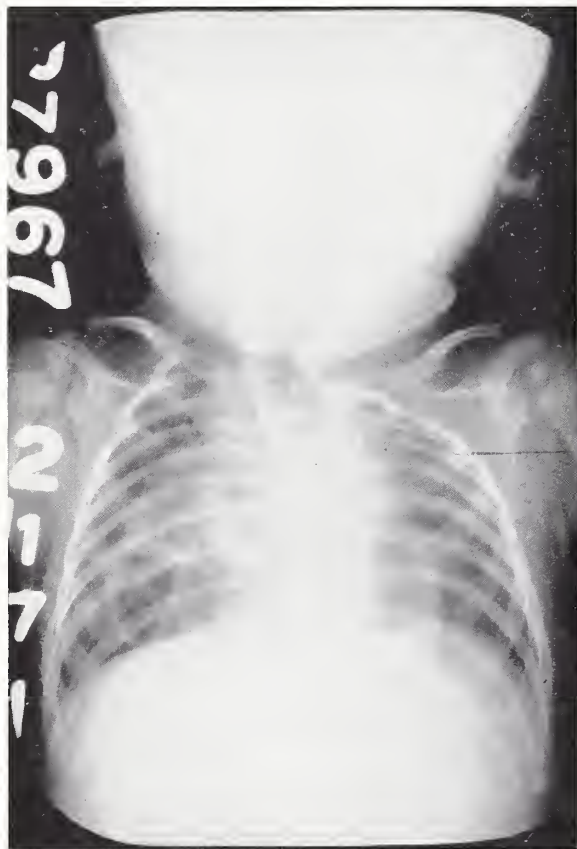


Figure 3. Chest x-ray of child with diaphragmatic hernia. The jejunum passed through the left chest through the posterior mediastinum into the right chest. An incidental finding at surgery was a duplication of the jejunum.

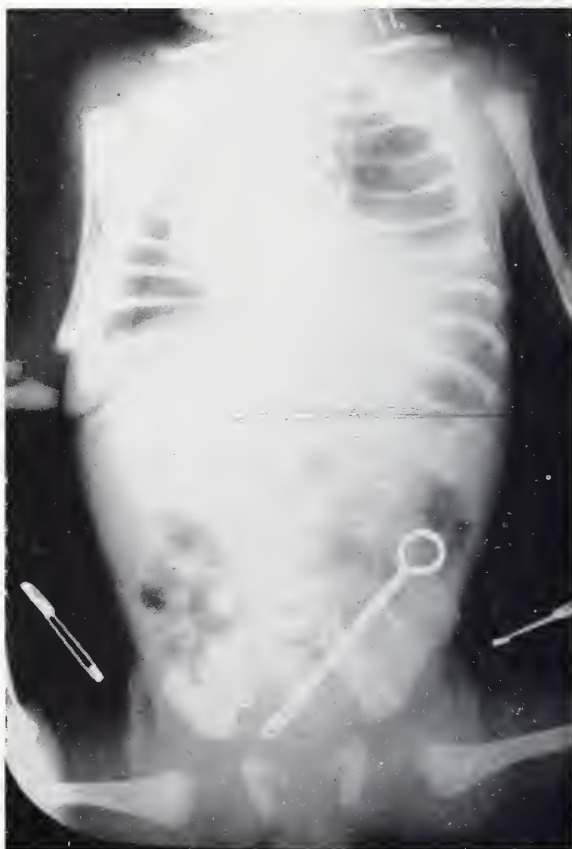


Figure 4. Roentgen film of chest demonstrating a congenital lung cyst.

volvement may add drowsiness, irritability and, rarely, convulsions. Early in the sequence of events, abnormal physical findings in the lungs may be almost nil, but x-ray findings of pulmonary inflammation may appear as early as 30 minutes after ingestion of the poison. Up to 75 per cent of children who have ingested a petroleum hydrocarbon will demonstrate roentgenographic abnormalities characterized by fine, dense, mottled areas radiating from the hili to the lung bases, and often associated with some peripheral emphysema. These findings may subside in about 36 hours, unless progression to consolidation or atelectasis occurs. The mortality rate varies from 4 to 10 per cent, according to recent statistics, death being due to progressive pulmonary involvement. Figure 5 shows two films of the same patient, the first on the day the kerosene was ingested, and the second six days later.

There has been a great deal of discussion about whether or not a child who has ingested a petroleum hydrocarbon should have gastric lavage. Without entering into the controversy, I might say that certainly the pneumonia is not significantly secondary to the aspiration of hydrocarbon, and any lavage procedure should be done very cautiously so as to avoid further embarrassment secondary to

aspiration. If there is no x-ray evidence within 12 hours, it can reasonably be concluded that the patient will escape the pneumonitis. Treatment consists of supportive nursing care and therapeutic doses of antibiotics to prevent the development of secondary bacterial pneumonia. Oxygen and parenteral fluids are to be given when the clinical course dictates them.

STAPHYLOCOCCAL INFECTIONS

Staphylococcal infections are arousing a great amount of concern, as well as creating new problems in our hospitals. Some strains of this organism have hurdled the barrier of antibiotics and have created havoc through their resistance to the accepted forms of therapy. Staphylococcal pneumonia is one of the resultant problems, and as a complicating factor the staphylococcus is responsible for most instances of empyema today, most cases of which occur in infants.

Staphylococcal infection of the lung may arise as a primary respiratory infection, or may result from a hematogenous spread from an infection elsewhere in the body, such as an osteomyelitis. The infection may be a complicating factor of measles, chickenpox, influenza or cystic fibrosis of the pancreas. A common feature of staphylococcal



Figure 5. Chest x-ray findings after kerosene ingestion. The picture at the left shows findings on the day of ingestion; the one on the right shows the findings six days later.

pneumonia is the occurrence of multiple small abscesses within the lung. These lead to pyo-pneumothorax, pleural effusion, empyema and, frequently, pulmonary pneumatoceles. Pyo-pneumothorax is especially characteristic of this form of pneumonia.

In consultation during the past year, I saw a case of pneumonia due to *Staphylococcus aureus* and *albus*. When first seen, the five-month-old infant had an undifferentiated upper-respiratory infection which in the course of two days had progressed to a distressing state. Initial x-ray films of the chest demonstrated pneumonia of the right lower lobe. Two days later, tension pneumothorax was demonstrated (Figure 6A). Needling and continuous suction gave relief at first, but later, in spite of these measures, the child had severe respiratory distress. Figure 6B shows the needle in place while the pneumothorax persisted. It was necessary to do a thoracotomy, at which time multiple abscesses, some of them ruptured, were found in the right lower lobe. That lobe was resected, and the child recovered satisfactorily. Cultures of the surgical specimen demonstrated the *Staphylococcus aureus* and *albus*. It was striking to see this child slip into a very precarious situation in a short period of time as the pneumothorax

developed. Death appears imminent in such cases, and it may indeed occur unless immediate corrective steps are taken. Hendren and Haggerty³ recently reported a series of 75 cases of staphylococcal pneumonia in infants and children, 59 of whom were under 18 months of age. There were nine deaths, the oldest of the fatalities being a child 19 months of age. These authors emphasized the importance of the x-ray findings of cystic radiolucent areas.

FIBROCYSTIC DISEASE OF THE PANCREAS

Fibrocystic disease of the pancreas usually terminates fatally, with pulmonary complications. Early among the manifestations, there are frequent bouts of bronchitis, pneumonia or undifferentiated upper-respiratory disease. In fact, it may be these states that lead to the diagnosis of the primary disease. Progressive fibrosis of the pulmonary structures occurs to such an extent that the radiologist often will suggest the diagnosis without knowing anything of the patient's clinical course. Eventually, the pulmonary disease is too great for the patient to withstand any longer. The routine use of antibiotics, of course, will aid in prolonging life, but it isn't enough.

One of my more interesting patients was a boy

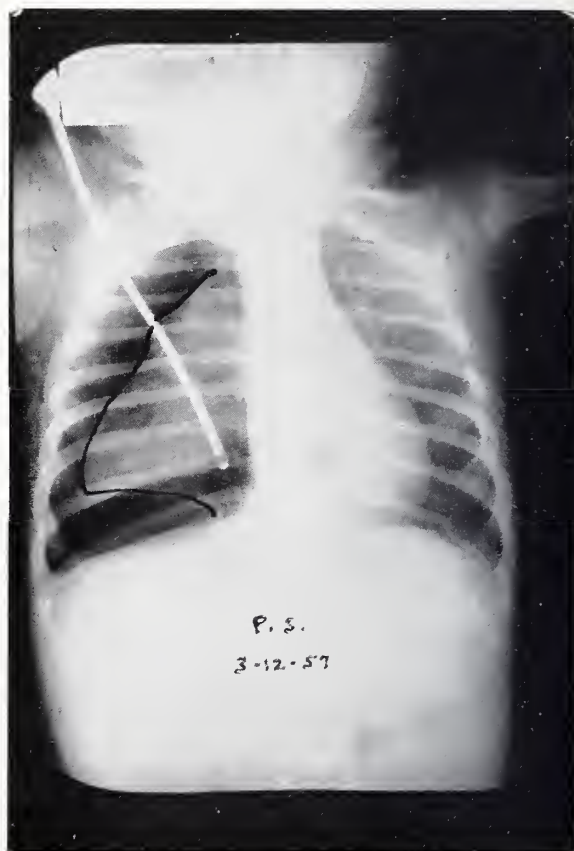
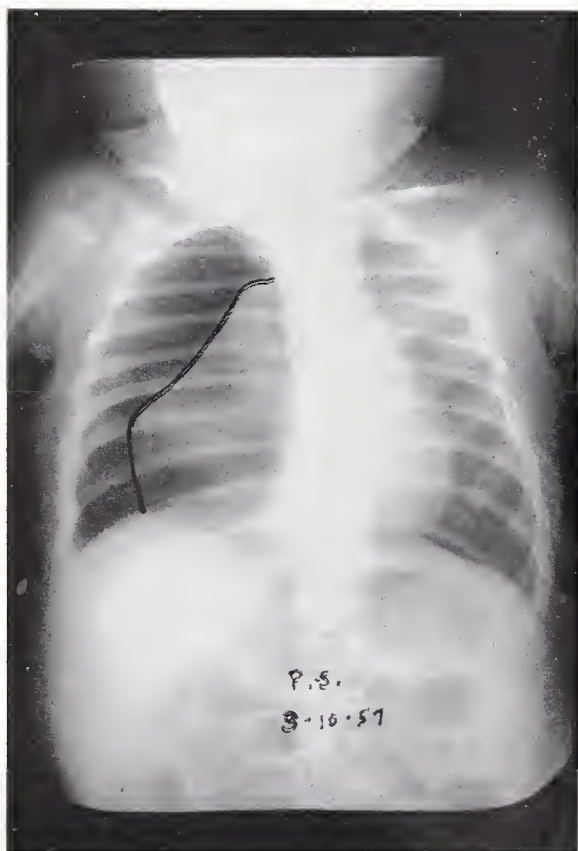


Figure 6. Staphylococcal pneumonia and tension pneumothorax. Left, the initial findings at the time of the development of the pneumothorax. Right, two days later, showing persistence of the pneumothorax in spite of continuous suction.

who had been diagnosed as having meconium ileus and had been operated upon for the obstruction at the age of two days. He did well at first, but within a few months began having numerous bouts of pneumonia and bronchitis. With each succeeding attack, he responded less favorably, and at four years of age he died of staphylococcic pneumonia and lung abscesses. Figure 7 shows the films of another child with fibrocystic disease of the pancreas, with bronchiectasis. This girl had marked compensatory changes in the contour of the thoracic cage, and her pulmonary difficulties were also manifested by clubbing of the fingers and toes. This girl died at the age of six years, and at autopsy the lungs were literally filled with purulent matter.

INTERSTITIAL PNEUMONITIS

By using the pseudonym *interstitial pneumonitis*, I can include bronchiolitis in this discussion. Patients with this disease characteristically start with an upper-respiratory infection of an undifferentiated type, and afterwards have a gradual onset of acute respiratory distress—dyspnea, expiratory wheezing and irritability. These young infants frequently have dyspnea out of proportion to the remainder of their clinical findings, often to the extent of having orthopnea and slight-to-moderate

cyanosis. The chest cage becomes rounded, with anterior lifting and limited motion. Hyperresonance is present, the inspiratory phase is shortened, and the expiratory phase is much prolonged, ending with a fine, high-pitched, musical wheeze. The roentgenographic findings may include fine patchy densities and emphysema.

These infants who have no stridor need high-humidity oxygen, as well as antibiotics. They have no upper respiratory tract obstruction such as does the patient with laryngotracheobronchitis, and tracheotomy is therefore contraindicated. Besides needing enhanced oxygenation, these infants must be watched closely for cardiac failure. The signs to be watched for are descent of the liver edge, increasing pulse rate, gallop rhythm and pulmonary edema. These are indications for digitalization.

Much has been written in recent years about the possibility of a relationship between bronchiolitis and the manifestations of allergy in later years. I am sure we still have a great deal to learn in this regard. A great many of our bronchiolitis patients later have difficulties with hay fever, allergic rhinitis and the like, but we also see a great many people with allergic states whose histories don't include bouts of bronchiolitis. In this connection, we must remind ourselves that "all that wheezes

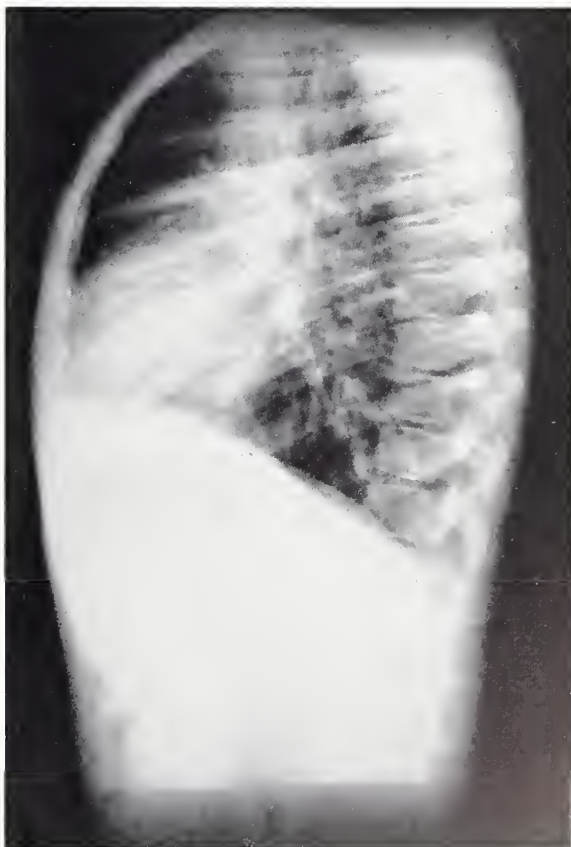
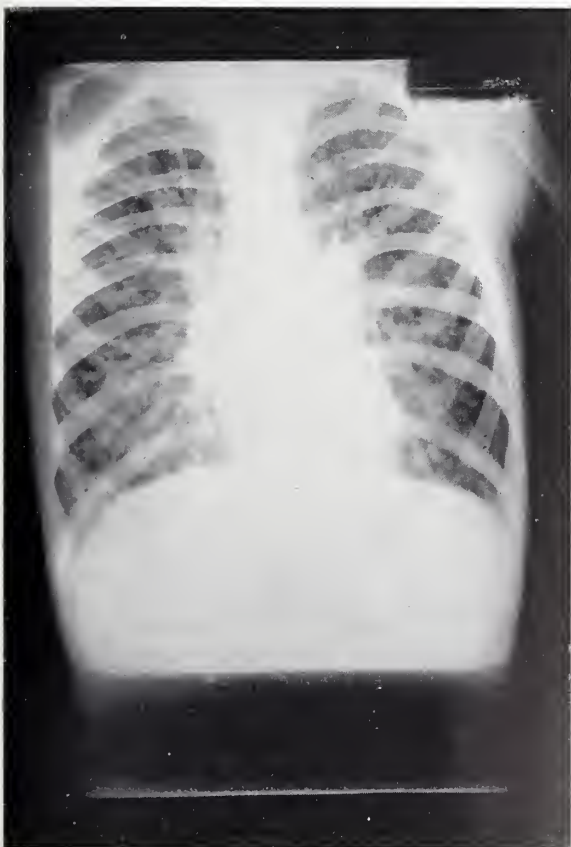


Figure 7. The chest x-ray findings in a six-year-old girl with fibrocystic disease of the pancreas. Marked bronchiectasis and change in the thoracic cage configuration are demonstrated.

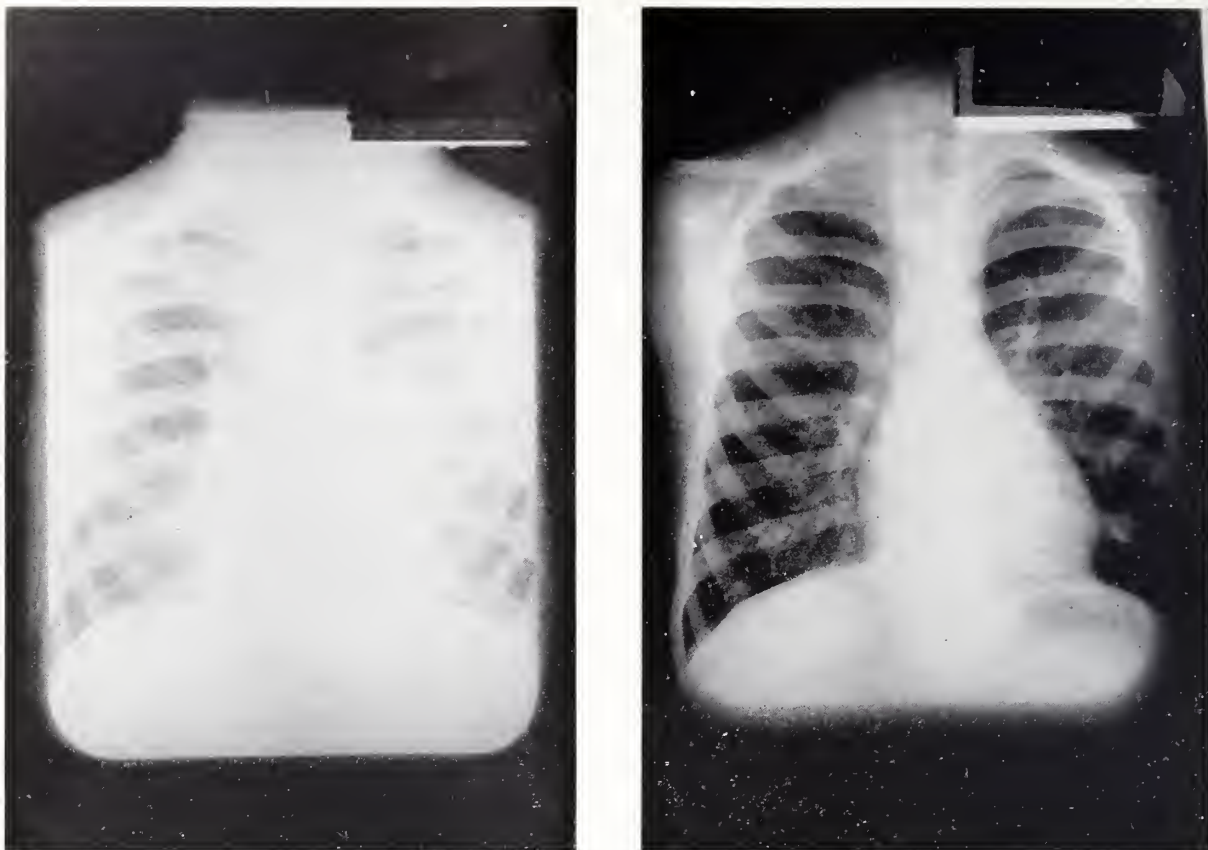


Figure 8. Childhood pulmonary tuberculosis. At the left, the initial findings when routine school tuberculin testing had given a positive result. Right, the same patient eight months later, after treatment with para-aminosalicylic acid and Isoniazid.

is not asthma," and that many cases of "childhood asthma" are really bronchiolitis or asthmatic bronchitis. True, adrenalin will give evidence of relief, but this drug acts to relieve bronchial spasm by causing immediate and effective relaxation of the bronchial musculature. In addition, it will lessen the edema of congested bronchial mucosa and increase vital capacity. I am sure, however, that the use of this drug is of little help in distinguishing one disease from the other.

TUBERCULOSIS

Primary pulmonary tuberculosis in children is the final entity that I wish to include in this discussion. I am sure there is more tuberculosis around us than we suspect. During the past six months, I have seen three children who were recent tuberculin-test converters (from negative to positive), who demonstrated pulmonary changes, and who demonstrated tubercle bacilli in stomach washings or in an incidental cervical lymph-node biopsy. One child presented cervical lymphadenitis.

These children are usually asymptomatic, even in many instances of extensive pulmonary infection. There may be only the usual signs of chronic infection—fatigue, undernutrition and irritability. In other instances, the diagnosis can easily be

made from the classical symptoms of productive cough, night sweats, fever, malaise and loss of weight. Routine tuberculin testing, however, is most helpful in finding these cases.

In one of our patients, a 6-year-old Negro girl, the presenting complaint was cervical lymphadenitis. Subsequent tuberculin testing, chest x-ray and lymph-node biopsy established the diagnosis. The other two cases were brought to our attention as a result of positive tuberculin tests at school. Both of these children were essentially free from symptoms, yet demonstrated positive pulmonary findings as well as acid-fast bacilli in the stomach washings which cultured true in guinea pigs. Figure 8 demonstrates the chest films of one of these patients at the time of diagnosis and eight weeks later.

At present there is a strong feeling that such children should be treated with antimicrobial drugs. Such therapy, it is felt, shortens the period of morbidity during the primary disease, prevents progressive disease, and decreases the incidence of reinfection forms of tuberculosis. The drugs used are Isoniazid, para-aminosalicylic acid and streptomycin. Robinson,⁴ at the National Jewish Hospital in Denver, has outlined a specific plan of treatment as follows:

ANTIMICROBIAL THERAPY FOR TUBERCULOSIS

1. Children under 3 years of age with a positive tuberculin test should be treated.

2. Children from 3-10 years of age should receive specific therapy under the following conditions:

a. If diagnosed within 6 months of conversion.

b. If they have a strong family history of tuberculosis and especially, in addition, if they belong to one of the racial groups (Negro, Spanish-American or Irish) which have poor resistance to tuberculosis.

c. If there is a large lesion of active primary disease on x-ray examination, and they are chronically ill.

d. If they have radiological evidence of a healed primary lesion and then get measles. In this event, three months of therapy should be adequate if no evidence of reactivation of the lesion develops within that time.

3. Children from 10-16 years old should be treated:

a. If there is a history of tuberculin conversion within one year.

b. If a girl is in the period extending from about 6 months before to 6 months after the onset of menses and has a history of previously having had radiological evidence of active primary disease, she should be treated for one year because of the tendency for reactivation to occur at this time.

c. If there is definite radiological evidence of active primary infection.

The drugs are used in the following manner:

1. Isoniazid: 16-20 mg/Kg. of body weight per day for one year. If there are signs of neurotoxicity, give 10-50 mg. of pyridoxine. If the patient has a history of convulsions, also give daily phenobarbital or Dilantin.

2. Para-aminosalicylic acid: to be used in the absence of evidence of a level of active Isoniazid in the blood of greater than 0.4 micrograins per ml. six hours after a test dose of one-half the daily dose of Isoniazid has been administered. If used, para-aminosalicylic acid should be given in doses of 6-10 Gm. per day, or about 200 mg. per Kg. for infants, for one year.

3. Streptomycin: to be administered intramuscularly, 200 mg. per Kg. of body weight per week in divided doses for one month, only in hospitalized and chronically ill patients having large lesions on x-ray examination.

In addition to the drugs, the child must receive adequate diet for his age, and if clinically well, normal, and active in school and at play. It is to be stressed that the child's asymptomatic primary tuberculosis is *not* contagious.

CONCLUSION

This review of pulmonary diseases in children is far from complete. Selected typical cases have

been used to stimulate thought about the multiplicity of pathological states which may occur.

Such pulmonary diseases will always be a challenge in the practice of medicine—especially to physicians who treat children. When we are aware of these many possibilities, when we exercise our diagnostic acumen to the fullest, and when we use our laboratory and x-ray facilities wisely—only then can we truly offer our patients good medical care.

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HEALTH INSURANCE PAYMENTS
TO IOWANS, 1958

Benefit *payments* by health insurance companies to the people of Iowa reached a new high during 1958, the Health Insurance Institute reported on April 1. In the period from January 1, through December 31, 1958, it said, an estimated \$35,600,000 was paid them to help cover the cost of hospital and doctor bills, and to replace income lost through sickness and disability. This represents a 4.4 per cent gain over the 1957 figure of \$34,100,000, and is based upon reports from insurance companies doing business in the state.

The rise in benefit payments in Iowa was reflected in the figures for the nation as a whole, the Institute noted. Nationally, persons protected against the expense of hospital and medical care and treatment received a total of more than \$2,600,000,000 in *cash* benefits during 1958, up 8.3 per cent over the previous year's high of \$2,400,000,000.

By the end of the year, an estimated 70,000,000 persons were covered by health-cost policies purchased from commercial insurance companies, the Institute said.

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Bronchial Asthma

LAWRENCE J. HALPIN, M.D.

CEDAR RAPIDS

BRONCHIAL ASTHMA is without a doubt the most distressing, the most interesting and, at times, the most baffling of all the allergic diseases. The manifestations of allergic disease are many and varied, the signs and symptoms being dependent upon the shock tissue involved by the antigen-antibody reaction. Because there seems to be a predominance of allergic symptoms referable to the respiratory tract, it is fitting that these remarks be confined to this subject. It is fitting, too, that bronchial asthma be discussed at this time because of the frequency with which this disease is seen by the general practitioner. He should be familiar with the improved measures by means of which the asthmatic patient can be offered temporary or extended relief and comfort.

DEFINITION AND CLASSIFICATION

Asthma is best defined as dyspnea with a characteristic expiratory wheeze due to obstruction of the bronchial tubes. The pathological physiology is recognized by edema of the bronchial mucosa, the presence of an excessive amount of thick, tenacious mucus, and spasm of the bronchial muscles. All treatment directed toward the immediate relief of asthmatic symptoms must, if successful, reduce bronchial edema, relax the bronchial musculature and release the tenacious sputum that has closed the bronchial lumens. Similarly, preventive specific therapy must protect the patient against these three phenomena that obstruct the free flow of air through the bronchial tubes.

Bronchial asthma can be classified in either of two ways: seasonal as opposed to perennial, or intrinsic as opposed to extrinsic. The patient with seasonal bronchial asthma has symptoms that occur only at specific times during the year—in the spring, summer or fall—when he comes in contact with the trees, grass, weeds or molds to which he is susceptible. For example, the patient with ragweed sensitivity has a recurrence of symptoms each year following or in association with ragweed seasonal hay fever. Contrastingly, the patient with perennial attacks of bronchial asthma may have attacks at any time during the year regardless of season or climate, depending upon his daily or frequent environmental or dietary contacts.

Asthma may also be classified as being either of intrinsic or extrinsic origin. The extrinsic type of

bronchial asthma has just been described. In other words, the causative factors of this bronchial asthma are found in the patient's environment or diet, and may be recognized by history, by investigation or by exposure. Intrinsic asthma usually is present perennially, but it may occur spasmodically with some degree of interval clearing. Some authorities regard intrinsic asthma as infectious in origin, and point out that the patient observes his initial attack after the age of 45 or 50 years. This type of patient rarely shows significant skin-test reactions. Another example of intrinsic asthma can be observed in some patients during the menopause. In them, the asthmatic complaints clear spontaneously or upon adequate treatment or correction of their hormone deficiency.

DIAGNOSIS

The uninitiated physician or non-allergist may believe that the diagnosis of bronchial asthma is made upon a record of positive or negative reactions to skin tests that have been done either by the intradermal or by the scratch method. Nothing could be further from the truth. The accurate clinical and etiological diagnosis of bronchial asthma is dependent upon the taking of a thorough and complete history revealing the presence of seasonal or perennial symptoms, the aggravation of perennial complaints during a pollen or mold season, the initiation of asthmatic complaints upon exposure to known environmental or dietary contacts, the suspicious absence or presence of any infectious characteristic in the complaints, and a multiplicity of other important features and facts. The history must also rule out or confirm the presence of any complicating diseases or illnesses. The diagnosis of bronchial asthma, in fact, is made on the history.

An accurate history will record differentiating diagnostic points between the symptoms of allergic bronchial asthma and those of suspected cardiac asthma, infectious bronchitis, bronchiectasis or emphysema. History and physical findings will confirm the diagnosis, and future therapy, either specific or non-specific, may be indicated. The history will also reveal the outstanding characteristic of typical uncomplicated bronchial asthma—its reversibility. In fact, uncomplicated bronchial asthma cannot be diagnosed without a history, since physical findings are well within normal limits in the patient who is between attacks. Bronchial asthma complicated by emphysema or infectious bronchitis may become irreversible, however, and

Dr. Halpin presented this paper at the Annual Meeting of the Iowa Academy of General Practice, at Des Moines in September, 1958.

once this has been established, the severe symptoms of wheezing, cough and respiratory difficulty can best be simply controlled, rather than removed or eliminated.

NON-SPECIFIC TREATMENT

The treatment of bronchial asthma is divided into specific and non-specific measures for the relief or the prevention of the symptoms. The ideal treatment of any allergic disease, including bronchial asthma, is the removal of the cause or causes, if they can be removed, from the patient's environment or diet.

Most of us are familiar with the non-specific measures employed for the relief of the symptoms of bronchial asthma. Let's mention them here and give a word of caution and a bit of advice regarding the employment of these aids. Perhaps the first question that is put to an allergist by the patient with severe bronchial asthma is "Would a change of climate do me any good?" It is decidedly unwise for a physician to recommend automatically and blindly that a patient with bronchial asthma remove himself from his established home. First of all, it is imperative that the patient should know what benefits he can rightly expect from a climatic change and compare these with the financial and physical hardships that may be encountered. Before these can be ascertained, he must recognize by experience or information the factors that are producing his complaints. With this knowledge, it can be determined whether he is going to be able to avoid them in his new location. It would do little good for a patient who is markedly sensitive to ragweed to effect a climatic change to an area that is not completely free of ragweed, or to remain there only temporarily. For example, it is wrong for a patient to leave the Middlewest in very early August, remain away from the ragweed area and then return early in September at the height of the ragweed season in order to place himself or his child in school. These are the patients with histories of having had uncomplicated seasonal hay fever until their sudden exposure to heavy pollen concentration at the height of the ragweed season. Thereafter, their initial symptoms of bronchial asthma will be repeated each successive ragweed season. A change in climate may be justifiably recommended for asthmatic patients who have complications of emphysema, persistent bronchial infection or a definite bronchiectasis. These are the patients who avoid extremes of high and low temperatures by moving to dry, moderate areas. These are the patients, too, who avoid exposure to repeated infections which aggravate their complaints.

Regardless of the claims made by many manufacturers, there is no piece of mechanical equipment which will cure or definitely relieve bronchial asthma if that piece of equipment is the only facility used in an effort to obtain relief. Air-conditioning, in itself, will not produce complete re-

lief from bronchial asthmatic complaints, and most of the window air-conditioners are hardly adequate for both mold and pollen filtration. However, the patient with seasonal bronchial asthma should employ any means that will provide him additional relief. For that reason, the use of air-conditioning equipment, particularly in his bedroom during the height of the season, is sure to be helpful, but should be considered as a supplement or adjunct, rather than as a complete therapeutic program.

DESENSITIZATION

Specific therapy should be instituted for those factors in the environment which cannot be eliminated or avoided. Pollen, dust and mold sensitivity must be treated with pollen, dust and mold extracts. Such treatment must be specific for the patient and specific for the causative pollen or mold. As I have said, the history will reveal the suspicion or the diagnosis of a seasonal pollen or mold sensitivity in producing asthmatic complaints, but allergy investigative studies will identify the causative pollen or mold through positive reactions to either scratch or intradermal testing.

Desensitization programs (really hyposensitization) must be individualized for each patient. This cannot be accomplished by using a dosage schedule based on geography rather than sensitivity. In employing pollen, dust or mold extracts, the physician is advised to maintain a good degree of respect for those materials and to realize that the symptoms of bronchial asthma can be alleviated by administering them only in proper doses at proper intervals. It is recognized, too, that a marked and very serious aggravation of the asthmatic complaints can be produced by a disregard for the potency of these extracts—i.e., the administration of a dosage far in excess of the patient's individual tolerance for these materials.

CHEMOTHERAPY

Of the many drugs that are available for the relief of bronchial asthma, epinephrine 1-1000 aqueous solution is by far the most efficient, most reliable and most economical. In addition to all of these advantages, epinephrine 1-1000 is also the safest drug that can be employed in bronchial asthma. The usual dosage of four or five minims can be repeated every 20 minutes if necessary, and the physician should have no fear of using this dosage repeatedly in subcutaneous injections. Asthmatic patients (or the mothers of asthmatic children) should be instructed in the self-administration of epinephrine 1-1000 by injection. The drug is safe; harm cannot arise from its use by subcutaneous administration; and the immediate, adequate and satisfactory relief obtained with this agent far outweighs any of its so-called side effects. There are no recognized ill effects. The usual patient with bronchial asthma will admit that multiple drugs have been employed in an effort to re-

lieve his asthma. In many instances, the physician has not considered epinephrine because he was "waiting until the patient needed it." In view of the safety, reliability, value and cost of this drug in the relief of asthmatic symptoms, the patient with bronchial asthma should have epinephrine 1-1000 to provide relief of his symptoms as soon as the correct diagnosis of asthma has been established.

Other forms of epinephrine are available, but the success of the so-called slow-acting oil or gelatin solutions has not been outstanding. The oil or gelatin epinephrine should not be employed in an effort to relieve *immediate* symptoms. They can be used upon occasion—but are not highly recommended—in an effort to prolong the relief already obtained with aqueous epinephrine.

The first attempt to relieve the distressing symptoms of bronchial asthma must have been the administration of some medication given by inhalation or aerosol. With the passage of years since the original introduction of the odorous stench of burning stramonium leaves, advances and additions have been made so that the patient now has a multiplicity of aerosol solutions and pieces of equipment with which relief can be attempted. Most of today's solutions for nebulization are based upon the epinephrine or epinephrine-like properties they all possess. It matters not whether the nebulized solution reaches the bronchial mucosa in a supposedly measured dose supplied by a squeeze on a bulb, or with the assistance of other mechanical equipment. It is absolutely necessary that the patient be adequately instructed and informed of the exact manner, method and means by which the nebulized solution should be inhaled. In addition, the patient should be adequately apprized concerning the dangers and difficulties that may arise from aerosol solutions nebulized into the bronchial tree. It is true that any form of medication that is easy to use will be misused by the majority of patients. It is wrong to supply the asthmatic patient with a nebulizer and a bottle of solution with the advice to "use it when you need it." The too frequent use of most nebulized solutions by the patient with severe or recurring symptoms of bronchial asthma leads to dehydration and over-medication. Dehydration in the asthmatic patient is an extremely serious state, and over-medication is condemned in any therapeutic program. These two disastrous results of aerosol therapy—dehydration and over-medication—are often the forerunners of status asthmaticus.

DEHYDRATION MUST BE CORRECTED

It follows that if dehydration is a very serious feature of bronchial asthma, then the correction of dehydration should be an important factor in the relief of asthmatic complaints. The administration and maintenance of adequate fluid and electrolyte

balance is a definite "must" in the patient with bronchial asthma. It is not unusual to relieve symptoms of severe, continuous asthma by the simple administration of 1,000-2,000 ml. of intravenous fluid. The resulting hydration liquifies the tenacious sputum, permits its production, and thus provides the patient with an adequate air passage. Aminophylline may be safely added to the intravenous infusion in a dosage of approximately 1 Gm. to each 1,000 cc. of intravenous fluid. This infusion may be given for a few hours, or it may be administered continuously over a prolonged period of 24 to 48 hours if the severity of the symptoms warrants such procedures. ACTH is another adjunct which may be added to the intravenous solution in an effort to extend relief to these patients. Theophylline preparations are reliable and worthwhile in the relief of asthmatic complaints. The usual methods of administration of aminophylline and related preparations are: oral, intravenous or rectal. Intramuscular administration of aminophylline is not recommended because of the pain experienced by the patient at the site of injection. The intravenous route is recommended for the patient with acute, severe symptoms of bronchial asthma. This is particularly true for the patient who has failed to respond adequately to previous injections of epinephrine 1-1000, or in whom the epinephrine is being required at too frequent intervals. The dosage of intravenous aminophylline is 3.75 grains in 10 ml., or 7.5 grains in 20 ml. of solution.

A word of caution about the intravenous administration of aminophylline. The solution should be given with extreme care and with a measured degree of slowness. At least five to eight minutes or longer should be required for the administration of 10 ml. of aminophylline solution (3.75 grains). If the 20 ml. amount (7.5 grains) is administered intravenously, at least 12 to 15 minutes is strongly recommended. Most unpleasant and alarming reactions have resulted from the too-rapid administration of intravenous aminophylline.

The oral use of aminophylline and other xanthine preparations is reserved for those patients who need or desire medication for the prevention rather than for the actual relief of their complaints. Aminophylline is often a source of nausea and vomiting in the patient who has an idiosyncrasy or intolerance for this drug. This feature of the preparation—a central rather than a gastric type of nausea—may be avoided through the substitution of some oral preparation other than theophylline with ethylene diamine. Rectal administration of aminophylline can be quite satisfactory as a suppository or as a small retention enema. The dosage should be guarded. The 7.5 grain ampule or suppository should be reserved for adults, and the 3.75 grain preparation reserved for children over the age of five years. Extreme caution

must be exercised in the use of this drug in infants and in children below four or five years of age if one is to avoid overdosage.

SEDATION IS DANGEROUS FOR THE ASTHMATIC PATIENT

A word about sedation. Do not expect to relieve symptoms of bronchial asthma by simply administering a sedative. Wheezing, cough and respiratory difficulty are not relieved by these preparations. The patient who is sedated is forced to combat his respiratory difficulty in a drowsy, depressed state. Employ sedation for its effect and for its effect only. In other words, sedate the asthmatic patient if his excitability and anxiety warrant it, but be sure to use other accepted measures for the relief of the asthmatic symptoms. The use of morphine is contraindicated in the asthmatic patient because of the central respiratory depression associated with it. Demoral may be employed cautiously if the dosage is limited to 50 or 75 mg. about every six hours, if care is observed in its use and if recognition is given to the possibility that the patient may become addicted to it.

It has been said that we should not rely upon sedation to relieve the symptoms of bronchial asthma. A similar statement can be made regarding antibiotics. We should not rely solely upon the administration of antibiotics for the relief of symptoms of infectious bronchial asthma or asthmatic bronchitis, particularly in children. It is not unusual for a child with simple, uncomplicated bronchial asthma to have a mild elevation of temperature, and because of such a hyperpyrexia to receive an antibiotic preparation by the oral or by the intramuscular route. If this is prescribed as a preventive measure against any secondary infection that might be present, then at the same time the physician should employ drugs to relieve the symptoms of bronchial asthma. Since antibiotics do not possess sympatho-mimetic properties, one must not rely upon them to relieve bronchial asthma. Similarly, antihistaminic preparations must not be depended upon to relieve the symptoms of bronchial asthma. Antihistaminic drugs are very satisfactory when they are employed for their proper indications and at their proper interval, but they are not reliable for the relief of the symptoms of bronchial asthma.

Potassium iodide is one of the most popular and most reliable drugs available for use in chronic bronchial asthma, but it is often forgotten in these days of hormones, steroids and other newcomers. The expectorant action of the iodides and the liquifying effect they have on tenacious sputum may in themselves be the answer to many of the asthmatic patient's problems. The saturated solution in a total daily dose of 30 to 60 drops can be strongly recommended. The enteric-coated five-grain tablet is preferred by some patients. Rhinorrhea, skin eruptions and lymphadenopathy are signs of iodide idiosyncrasy in some individuals.

In substitution, ammonium chloride may be beneficial. Understandably, these expectorant medications are indicated in chronic rather than in acute bronchial asthma.

The indications for oxygen therapy in the asthmatic patient are the same as in other medical problems—namely, oxygen want and need. The prolonged expiratory wheeze preceded by the hurried gasp at inhalation would indicate that the asthmatic patient has difficulty with the expiratory phase of his respiratory cycle. Consequently, measures for bronchial relaxation are far more imperative than is the supplying of oxygen. This is true of most hospitalized asthmatic patients. When oxygen might be employed—in a patient with pulmonary emphysema—the administration of the gas should be extremely cautious and at a low rate, never more than one or two liters per minute.

ACTH

We are all familiar with the use of ACTH and oral steroids in allergies and other diseases. In many instances they may be lifesaving! Forty units once or twice daily of ACTH in gel solution is good therapy for the patient with severe status asthmaticus. Intravenous ACTH may be given to relieve the severe symptoms of bronchial asthma, with 10-15 units of the aqueous solution added to intravenous glucose or saline. The dosage for steroids in asthma is essentially the same as in other diseases, and the same precautions must be observed regarding their use. The routine use of ACTH or adrenocorticosteroids by mouth is to be definitely condemned and certainly not advised. If they are employed, they must be used in a dosage that will produce the expected beneficial effect, to reduce the dosage gradually over a short period of time and eventually to remove the patient from this form of medication. It is better to use these drugs in repeated courses rather than offer the patient extended relief through the continuous and daily use of these preparations. They are dangerous, they have faults and they are used far too frequently with far too little knowledge concerning their immediate and long-range effects.

SUMMARY

In summary, therefore, we see that the patient with bronchial asthma must first have an accurate etiologic and clinical diagnosis. He must be investigated if such measures are indicated by his history and examination. And he must be treated for those factors which cannot be eliminated from his environment. Non-specific measures include epinephrine 1-1000, the safest, most reliable and most dependable of all the drugs available for the relief of bronchial asthmatic symptoms. One must not rely upon sedation, antibiotics or antihistamines to relieve the symptoms of bronchial asthma. ACTH and the adrenal steroids should be employed only in those instances where the course

of therapy is short, where the medication is definitely indicated and where it can be stopped without the patient's being subjected to unpleasant withdrawal symptoms.

The physician should treat his asthmatic patient in exactly the way he treats his other patients—in exactly the way he would wish to be treated himself.

A Throat Culture Program in the Schools

RICHARD O. EMMONS, M.D., AND W. H. GRIFFITH, M.D.

CLINTON

THE RELATIONSHIP between Lancefield Group A streptococcal infections and rheumatic fever is well established. In our present state of knowledge of rheumatic fever, the only prevention of the disease would be an adequate treatment of all Group A streptococcal infections.

In 1955, the physician members of the Clinton County Heart Committee proposed to their associates that the group should undertake a selective throat-culture program in order to detect streptococcal infections among children in primary-school grades, since the incidence of rheumatic fever has been found to be greatest in youngsters of that age group. The project was inaugurated during the 1955-56 school year, and this report covers the results achieved during that term and during 1956-1957 and 1957-1958.

AUTHORIZATION AND FINANCING

First, the program was recommended to the Clinton County Heart Committee, as we have said, and it gave the proposal its tentative approval. The details of the scheme and the reasons for undertaking it were next presented to the Clinton County Medical Society and to the Board of Directors of the Clinton Independent School District. When both of those groups had approved, the Clinton County Heart Committee gave its final consent. Then, early in the fall, the plan was explained to the teachers, the school nurses and the P.T.A. of the school where the study was to be started. Parents were asked to sign permits if they wanted their children to have their throats cultured. The costs were to be paid from Clinton County Heart Committee funds.

METHOD

The teachers of the selected classes were given simple instructions for determining which children might have throat infections, and they were asked to send all such youngsters to the school nurse. For those of the children whose parents had given permission, the nurse made throat swabs and took specimens to a laboratory where technicians made cultures of them by conventional methods. At the end of 24 hours, the cultures were

read by local pathologists as positive or negative for B hemolytic Streptococcus. Cultures were reported as positive only after identification of the stained organisms under the microscope.

Positive cultures were reported to the school nurse and to the children's physicians, and the school nurse, in turn, notified the children's families. Any child with a positive culture was excluded from school until he had had treatment that his family physician considered adequate and until that physician had signed a permit for his return to class.

In 1955, the program was undertaken as a pilot study, and there was no way to estimate the number of cultures that might be called for during the first year. With the amount of money on hand, however, it was felt that a school composed of 177 children through the third grade was the proper choice.

RESULTS

During the school year 1955-1956, a total of 104 throat cultures were taken under the program, some children having none and others several. The selections were made by the teachers and reflected their own judgment of the indications. Of those 104 cultures, 40 (38 per cent) were positive.

The response of the parents of the pupils in that first school was such that we decided to continue the program the following year. We felt it would be best to use that same school over a period of several years, but at the start of the second year two more schools were added, since with more funds available an additional 300 pupils could be included.

At that time we modified the program further by inaugurating sensitivity tests on positive cultures to enable the family physician to have some idea of the drug of choice in treating the children. Thus, necessarily, sensitivity testing added to the costs during the second and third years.

In 1956-1957, the total enrollment of the three schools selected for study was 414. In the original school, the enrollment during the second year of the program was 122, of whom 108 (87 per cent) were signed up for the throat-culture program. Of the 292 children in the other two schools, 226

(77 per cent) were signed up. One of the school nurses had the original school for all three years of the study, and another of the nurses had the remaining two schools during both of the first two years, but a third nurse had them last year.

In 1956-1957, in the original school, 110 cultures were done, and 50 (45 per cent) of them were positive. In the other two schools, with 226 children in the program, 6 cultures were done and 4 (66 per cent) of them were positive.

The cause or causes for the low numbers of cultures in the latter two schools cannot be determined. Perhaps the purpose and value of the program had not been made clear enough to the individuals responsible for the mechanics of obtaining the cultures.

The same program was undertaken in the same three schools in 1957-1958. The enrollment in the original school at the beginning of that year was 116, of whom 97 (83 per cent) were signed up for the throat cultures. Thirty-six cultures were done on this group, and 13 (36 per cent) were positive. The percentage of positive findings was rather constant over the three years—38, 45 and 36 per cent. The reason for the smaller number of cultures obtained during 1957-1958 is not clear. The 5 per cent decrease in enrollment in the program certainly cannot have been responsible.

In the other two schools during 1957-1958, the combined total enrollment was 284, of whom 250 (88 per cent) were enrolled in the throat culture program. Seventeen cultures were obtained from that group, and only one of them was positive.

DISCUSSION

The sensitivity tests for the positive cultures showed organisms sensitive to penicillin in only three or four instances in two years. However, all pathogenic organisms found in the original cultures were used to determine sensitivities. Therefore, the incidence of penicillin-resistant Streptococci cannot be stated in the results of this study. If the treatment of strep infections is the only goal, and not the treatment of all presumably pathogenic organisms found on throat culture, then sensitivity tests are not indicated. More recent reports in the literature have questioned the value of sensitivity tests such as were done in this study. At the present time, we do not believe we would recommend the inclusion of sensitivity tests by this technic in a throat culture program such as ours. The American Heart Association continues its position that Group A hemolytic Streptococci are uniformly sensitive to penicillin.

With our method of culturing throat swabs, the cost undoubtedly is greater than that of some other programs where multiple cultures are grown on the same plate. We feel that our culture technic, carried out under the personal supervision of our pathologists, is bacteriologically sound, how-

ever, and we would not want to substitute another one for it.

A small number of the B hemolytic Streptococci that were cultured probably fall into groups other than Lancefield Group A, and so would not have been followed by rheumatic fever even if they had been left untreated. An inexpensive but accurate method of typing B hemolytic Streptococci would enable one to know whether he were dealing with Group A Streptococci, and would eliminate the possibility of unnecessary treatment in any case, and thus a strep-typing method would be useful in a program such as ours.

The collection of throat cultures by the methods we used will turn up a certain number of strep infections that would otherwise be overlooked. Approximately 40 per cent of the cultures taken from children in our program in the course of three years were positive for strep infection. These children had been selected by their teachers as having indications of throat infection, although their parents had not considered them ill enough to stay out of school. How many of them might subsequently have become ill enough to be kept home is not known. Obviously, such a program as ours would not discover all strep infections. Presumably, each child would need to have daily throat cultures if all of them were to be found, and such a procedure would be very difficult.

Our undertaking was one of streptococcic detection, and only indirectly a rheumatic-fever prevention program. The incidence of rheumatic fever per 100 strep infections has been quite inconsistent in various reports. Rheumatic fever is a disease that may be very difficult to diagnose in certain cases. Other illnesses are often confused with it, and some true cases are not diagnosed at all. Though rheumatic fever is a reportable disease in Iowa, in actual practice it is not reported. For these reasons, the exact incidence cannot be determined for a community such as ours.

Based on present-day concepts of the incidence of rheumatic fever, it would be conservative for us to estimate that at least one or two cases of rheumatic fever have been prevented by our program, but the point cannot be definitely proved.

As a method of education in the importance of treatment for streptococcal infections, however, this program has been quite effective. About 83 per cent of the parents voluntarily enrolled their children in the throat culture program. These parents can thus be assumed to have seen the value of treatment for strep infections.

SUMMARY

Ours has been a three-year program for the detection of streptococcal infections in school children in the primary grades. Parents of approximately 83 per cent of the students voluntarily enrolled their children as participants. Youngsters whom the teachers thought to have symptoms of

respiratory infection were selected for throat culturing. Any child with B hemolytic Streptococci was excluded from school until he had been given adequate treatment by his family physician.

A total of 274 cultures were taken on these children—27 per cent of the total enrollment. Of those

274, there were 108 positives for B hemolytic Streptococci (39 per cent).

The physician members of the Clinton County Heart Committee would like to see the program continued, with certain modifications, for the purposes of education and community service.

A Symposium on Obstetric Hemorrhage

Obstetric Hemorrhage in Iowa

MADELENE M. DONNELLY, M.D., M.P.H.

DES MOINES

The Iowa Maternal Death Study was organized in 1952. In the following year, the State Board of Health made a regulation that the death of any woman during pregnancy, labor or delivery, or within a year thereafter, must be reported directly and within 24 hours to the Division of Maternal and Child Health as a "possible maternal death."

To date, there has been relatively poor cooperation with that regulation. At the end of each year, we have had to go through the slow and tedious process of matching death certificates of all females between the ages of 14 and 50 with birth certificates. We hope that the members of the Iowa State Medical Society will help us in getting better reporting of all possible cases.

Reports on the first three years of this study have been published.* In the first three years, 31.4 per cent of all the deaths related to pregnancy were the result of hemorrhage. The types of pathology seen in these cases were: postpartum hemorrhage 6; ruptured ectopic 7; abortion 2; rupture of the uterus 3; placenta previa 1; abruptio placentae 2; and retained placenta 1.

In several of these cases, the responsibility remained largely with the patient—failure to follow medical advice or failure to report for medical care. The most startling of these cases was a gravida 10, delivered at home by her husband, who was not brought into the hospital until her fifth postpartum day. She was dead on arrival, and the placenta was still in the uterus.

From the medical viewpoint, the most common omissions were:

Failure to have blood available or going before manipulative procedures were started

Failure to estimate the fluid and electrolyte balance carefully when infusing fluid

Failure to be alert to the possibility of an ectopic pregnancy, especially in the older obese patient.

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* J. IOWA M. SOC., 44:241-151 (June) 1954; 47:74-79 (Feb.); and 47:161-168, (Mar.) 1957.

The great majority of patients who died from hemorrhage were in the older multiparous group. Eighty-two per cent of these women were past 30 years of age, and 61 per cent had had at least four previous pregnancies.

We hope that reviews of these cases will point out areas for discussion and will thus make the profession more aware of the problem of obstetric hemorrhage.

Placenta Previa and Its Management

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Placenta previa is a situation that develops as a result of an abnormally low implantation in the uterine cavity. So far as is known, there is no preventive. It usually manifests itself in later pregnancy. There are some patients who exhibit symptoms during the first or second trimester, and the earlier the symptoms, the poorer is the prognosis for the fetus and, perhaps, the more serious is the situation for the mother. The degree of placenta previa is not always directly related to its gravity insofar as the mother's outlook is concerned. There are a number of factors which must be determined. The woman's general health is one of them, the promptness of the diagnosis is another, and the accuracy of the estimate of blood loss is a third.

Despite our best efforts, certain things are happening in actual or potential placenta previa cases today that, unless carefully managed, may be highly dangerous. One risk is that a patient may insist upon making decisions and remove herself from the physician's care. In an effort to reduce fetal loss or, in a positive sense, increase fetal salvage, most physicians prefer not to terminate the pregnancy in the late second trimester or during the first half of the third trimester (fetus living). Instead, they confine the patient in the hospital until bleeding forces the issue or until the fetus reaches reasonable viability. The physician makes the diagnosis by gentle sterile vaginal examination, having blood available for transfusion, and

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does no more than merely palpate through the cervical os to find the placenta. "Reasonable viability" means a much more advanced age than 28 weeks, for only about 3 per cent of infants survive delivery at such a premature stage of development. These patients become anxious to go home, but one can't treat placenta previa in the home.

We certainly do not like to do a section on a patient around the twenty-sixth to the twenty-eighth week. We do not induce labor when the fetus is viable.

Placenta previa manifests symptoms because it is a separation of the placenta. Unlike abruption, a separation due to thinning out or effacement is usually symptomless. The bleeding will vary from only a slight trickle to a considerable amount. One's estimate of the amount of blood loss must be accurate. A patient may say, "I lost a cup of more of blood," but when she is admitted, there is very little blood showing. It may be hard to believe her story, but such things do happen. Within the last year, I have seen two patients who had been sent home by young physicians who hadn't been convinced of the histories of bleeding. The patients came back during subsequent bleeding episodes, in extremely serious condition.

The incidence of placenta previa has varied between 0.8 and 0.5 per cent at our institution. In other words, placenta previa is about as common as face presentation. Now, one may see 300-400 cases without finding a previa or without diagnosing it. Some of these patients will go into labor and delivery without difficulty. If dilatation of the cervix occurs rapidly in the presence of a low-lying or marginal placenta, there may be comparatively little bleeding. A "partial" previa covers only a portion of the os, whereas "complete previa" means that the placenta covers the os completely.

The time of onset of bleeding varies. In the period 1946 to 1951, 46.5 per cent of our patients had bleeding between the twenty-eighth and thirty-sixth weeks of pregnancy, or 19 per cent in the first four of those weeks (28-32), and 27 per cent in the second four weeks (32-36). After the thirty-sixth week, bleeding occurred in 45 per cent of the series, whereas 7.5 per cent had bleeding prior to the twenty-eighth week.

The method of treatment has undergone some change at our institution. In the years from 1931 to 1945, we had about 28 per cent natural deliveries, but in the period from 1946 to 1951, only 12 per cent had vaginal deliveries. During the years 1931-1945, forceps extractions and versions and extractions were performed in 27 per cent. Cesarean section was the procedure employed in 44 per cent of mothers in the former period, and in 61 per cent during the latter time. The increased use of cesarean section has resulted from the availability of blood for replacement, the use of antibiotics, improved skills in doing cesarean sections and increased abilities to cope with the complications inherent in the procedure.

The mortality is appreciable, though it is not high. There was one death in the first 125 cases, but no deaths in the last 131. Any deaths are too many. These women die from hemorrhage, but they can also die from infection. They can die from cessation of kidney function. This "shut-down" may be the consequence of profound shock, even though there is restitution of blood pressure by replacement of blood and fluids, or it may be due to blood reaction and other things. Thus, the patient may die from her original disease, she may die from a complication of the disease, or she may die from the results of therapy.

Premature Separation of the Placenta

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By definition, premature separation of the placenta is the premature separation of the normally implanted placenta at any time after the twenty-eighth week. The incidence is about 1.0 per cent—slightly higher in multiparae and in patients with toxemia. From the figures that have been given by Dr. Donnelly, I have learned that there has been only one death from premature separation of the placenta in Iowa during recent years. That certainly is a splendid record, and it testifies to the great ability of physicians in this state in diagnosing and managing cases of abruptio. The maternal mortality should approach zero, with adequate blood replacement, fibrinogen where indicated and proper obstetrical management. The fetal mortality will depend upon the severity of the abruptio, the degree of the prematurity and the promptness of the delivery.

The placental separation may develop slowly, with the gradual appearance of symptoms and signs, or it may progress very rapidly, with severe hemorrhage and complete separation of the placenta. In the severe cases, hypofibrinogenemia may be initiated because thromboplastin from the retroplacental hematoma and the decidual fragments enters the maternal circulation. Normally, the placenta separates after the delivery of the infant, and the uterine sinuses are closed by the contraction of the strong uterine musculature. In abruptios, however, the uterine sinuses opened by the premature separation remain open, since they cannot be closed by the uterine musculature which is kept distended by the products of conception. Thus, cases of abruptio will be cured only when the uterus has been emptied of the products of conception and the uterine sinuses have been closed by the firmly-contracted uterus.

The therapeutic challenge is to determine the method by which the uterus can be most rapidly

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emptied with the greatest degree of safety to both mother and infant. There is no expectant treatment, and there can be no waiting for the baby to become more mature. The signs and symptoms will depend upon the degree of placental separation and upon the amount of blood loss.

Of the three types of abruptio which we see clinically, the first is the mild type. Fortunately this type occurs most frequently and seldom places either the mother or the infant in any danger. During a labor which progresses more rapidly than usual, there is a little more bloody vaginal discharge than is normally to be expected. There is no increase in uterine tenderness or tenseness, and no evidence of fetal distress. Examination of the maternal surface of the placenta after the delivery reveals a firmly attached, dark, partly organized blood clot of varying size.

The moderate abruptio placenta is the next-most-common type observed. The mother is seldom in serious danger, but the infant is in very real jeopardy. It is in this group of abruptios that prompt delivery is mandatory if there is to be an increase in fetal salvage. The essentials of the management are as follows. There must be immediate hospitalization, with no rectal or non-sterile vaginal examinations performed either in the admitting room or in the labor room. In some of these cases, it is difficult to distinguish between the symptoms of abruptio and those of placenta praevia. Second, there must be prompt replacement of blood loss and the administration of fibrinogen as indicated. Third, there must be extremely careful observation for evidence of fetal distress. Fourth, as soon as possible, there must be a sterile vaginal examination, with a double set-up ready for immediate cesarean section. If the vaginal examination indicates that delivery can be anticipated within a short time, the membranes should be ruptured and the baby permitted to deliver vaginally. Occasionally, a dilute pitocin infusion is used at the same time. If vaginal findings reveal that delivery is not imminent, then a cesarean section should be undertaken in the interests of the infant, as soon as the mother has been brought out of shock.

I should like just to mention two cases illustrative of this moderate group. One was a 23-year-old primigravida near term who had had an uneventful antepartum course and who suddenly experienced a vaginal hemorrhage of approximately 1,000 cc., the pain being minimal. On her admission to the hospital, shortly thereafter, the abdominal pain was gradually increasing, but there was only a trickle of blood from the vagina. Examination revealed a blood pressure of about 90/60 mm. Hg., a pulse of 120 per minute, and mild uterine tenderness and rigidity. The fetal heart tones were still regular.

Blood was immediately drawn for typing and cross-matching, and for fibrinogen determination. Through an 18-gauge needle, a 5 per cent glucose

and plasma expander solution was administered. A catheter was anchored into the bladder to provide urine for analysis, and it was left in place to provide us an indication of urinary output.

The patient was taken to the labor room, where immediate preparations were made for a sterile pelvic examination, with a double set-up. The nurse and assistant scrubbed, section instruments ready and an anesthetist in to the room. By the time a sterile examination could be performed, the patient had received blood and was no longer in shock. The fibrinogen level was recorded at 216 mg. per cent and the fetal heart tones were still regular.

The cervix was found to be about 4 cm. dilated and 50 per cent effaced, and the fetal head was at station zero. These findings indicated that even with rupture of the membranes and intravenous pitocin if needed, too many hours would elapse before the delivery of the infant. Thus, an immediate transverse cesarean section was performed under cyclopropane anesthesia. A 6 lb. 8 oz. baby in good condition was delivered, and 600 cc. of old clotted blood was found in the uterine cavity. The placenta showed evidence of having been separated over about half of its maternal surface. The uterus contracted well, and both mother and baby had an uneventful recovery.

I should like to cite another example of this moderate type of placenta abruptio. A 38-year-old primigravida entered the hospital at 38 weeks in early labor, with the fetal head at station zero, the cervix 2 cm. dilated, and the fetal heart tones regular. Several hours after admission, it was noted that there was more than the usual amount of bloody vaginal discharge. The uterus was becoming tender to palpation, and was remaining somewhat tense between contractions.

Abruptio was suspected, and blood was drawn for typing and cross-matching, and for determining the fibrinogen level. Shortly thereafter, the fetal heart rate fell to 80, stayed there for two minutes, then returned, and then fell to 80 again. Rectal examination revealed that the cervix was only 3 cm. dilated.

Because of the fetal distress, even in the absence of alarming symptoms of abruptio, an immediate cesarean section was performed. The findings included extensive hemorrhage and hemorrhagic infiltration of the entire uterine subserosal area. A baby weighing 6 lb. 4 oz. was delivered, and 200 cc. of old blood clots were found in the uterine cavity. Examination of the placenta revealed half of its maternal surface covered by an adherent old blood clot. In spite of the fact that the uterus was typically Couvelaire in appearance, it contracted well. Both the mother and the infant had an uneventful recovery.

In many multiparae and some primigravida patients with *moderate* degrees of placenta abruptio, labor is unusually rapid. Vaginal delivery, with or without rupture of the membranes is usually ac-

complished within a reasonably short time after admission to the hospital.

Now for the severe type of abruptio placenta. Fortunately, this group represents only about 10 per cent of the cases. In these, not only is the mother often in critical condition because of hemorrhage and shock, but most infants are lost because of extensive separation of the placenta. These patients are much more apt to have toxemia, are more likely to develop hypofibrinogenemia, and are more apt to go into a renal shut-down after delivery.

The findings in these cases are vaginal bleeding; severe abdominal pain; a tense, rigid uterus distended by concealed hemorrhage; slow, irregular or absent fetal heart tones; and impending or actual maternal shock.

The essentials of management are as follows. There must be immediate hospitalization and a drawing of blood for typing and cross-matching. Particularly in this group, fibrinogen levels are important, and it has been our habit at the Indiana University Medical Center to draw blood every 15 minutes, put it into a small tube and attach the tube to the wall next to the patient so that we can watch blood clotting, for we have found that fibrinogen levels don't always go along hand-in-hand with the amount of afibrinogenemia as manifested by the amount of bleeding.

An 18-gauge needle is inserted into the vein for the administration of a 5 per cent glucose solution and plasma expander. Blood is given when it has been made available, and fibrinogen is added as indicated. We anchor a catheter in these patients to observe urinary output. We take careful observations of blood pressure and listen to the fetal heart if heart tones are still present.

We perform a sterile vaginal examination as soon as possible, so that we can rupture membranes, augment labor and reduce the intrauterine pressure, which tends to slow down the possibility of further thromboplastin being expressed into the maternal circulation. After the blood loss has been replaced and afibrinogenemia has been corrected, a dilute pitocin infusion may be used to accelerate labor.

Cesarean section is seldom used in these severe cases, except occasionally in the interests of the infant, if heart tones are still regular after maternal shock has been brought under control, or—occasionally—if delivery cannot be accomplished by rupture of membranes and the administration of dilute intravenous pitocin, and if continued bleeding prevents stabilization in spite of blood transfusion and correction of the hypofibrinogenemia.

After delivery these patients should have a catheter anchored, and should be observed very carefully for evidences of shock and anuria, especially in cases of preexisting toxemia.

One of our patients who had this severe type

of abruptio placenta developed a renal shut-down which lasted seven full days. Only after having been put on the artificial kidney on two occasions, did she finally recover.

Ectopic Pregnancy

JOHN H. RANDALL, M.D.

IOWA CITY

There are two symptoms which one must consider when a diagnosis of ectopic pregnancy is made on the basis of clinical history. The most outstanding symptom is abdominal pain. Recently, a study of 200 cases of ectopic pregnancy treated at the University of Iowa Hospitals revealed that all patients complained of pain. It was moderate or severe in 97 per cent of them. Only three per cent considered the pain "insignificant." Thus, pain is a cardinal feature of the symptomatology.

For the most part, the pain is lower abdominal, usually in one quadrant or the other, but it may be diffuse over the whole lower abdomen. Sometimes the pain of ectopic pregnancy is referred to the back, to the shoulders, to the upper abdomen and to the rectum. Two deaths have occurred in Iowa during the past year because the patients complained of pain in the right upper quadrant and a diagnosis of gallbladder disease was made. The error of the physicians who made this diagnosis emphasizes the point that patients with ectopic pregnancy may have upper abdominal pain.

The second symptom to which one must give attention is irregular vaginal bleeding. About 91 per cent of our patients experienced it. This bloody discharge may be bright red down through the various shades to a blackish or chocolate color. Usually, however, it is reddish. As a rule, patients do not bleed much, and no great difficulties would ensue in any case simply because of vaginal bleeding. It is the possibility of intra-abdominal bleeding that is dangerous. The vaginal bleeding may precede the pain, it may start at the same time as the pain, or it may follow the beginning of the pain. In about 60 per cent of our patients, there is a history of a missed menstrual period, but in the remaining 40 per cent the irregular bleeding starts with a regular period. Thus, we must keep in mind that a missed menstrual period is not essential for making a diagnosis of ectopic pregnancy.

There are other symptoms like nausea, vomiting, dizziness and faintness, but they are not important. Abdominal pain and irregular bleeding are the cardinal symptoms of ectopic pregnancy.

Until his death on April 19, 1959, Dr. Randall was head of the Department of Obstetrics and Gynecology at the S.U.I. College of Medicine.

As far as abdominal findings of ectopic pregnancy are concerned, tenderness is the most outstanding. This tenderness is usually in one of the lower quadrants. Occasionally in a chronic ectopic there may be an abdominal mass, but usually none is palpable. On pelvic examination, the important finding again is tenderness. These patients, as a rule, are exquisitely tender. In about 75 per cent of our cases, there has been either an adnexal or a cul-de-sac mass. Thus, finding a tender mass will help the examiner in making a diagnosis.

The important thing, insofar as diagnosis is concerned, is a high index of suspicion. If one is to treat women, he must be pregnancy-conscious and malignancy-conscious. Among the pregnancy conditions of which one must be constantly suspicious, ectopic pregnancy ranks high.

Most ectopic pregnancies should be diagnosed from clinical history and findings. There are some which have atypical clinical histories and findings. One of the greatest diagnostic aids in such cases is cul-de-sac puncture. In our hospital, 91 per cent of these punctures have been positive. There have been no false-positives, though we have had a few false-negatives. Therefore, cul-de-sac puncture is the procedure which should be adopted whenever the diagnosis is not clear-cut.

A patient who has an ectopic pregnancy should, as a rule, be operated upon through the abdomen. If the patient is in shock, she should be given blood before being subjected to surgery. During the operation, the rule is to remove only the involved tube. If the ovary on that side is intimately associated with the ectopic mass so that it cannot be saved, then it should be removed with the tube. As a general rule, nothing else is indicated. Certainly no incidental surgery, such as appendectomy, removal of the opposite tube, myomectomy or suspension, should be undertaken in a patient whose abdomen is filled with blood and in whom there is some degree of shock.

The important thing is to make the diagnosis, and the principal consideration in the making of a diagnosis is keeping the possibility of an ectopic pregnancy constantly in mind. Whenever one sees a patient who has irregular vaginal bleeding and abdominal pain, he should think of ectopic pregnancy at once, and perform a good pelvic examination.

The Management of Incomplete Abortion

WALTER C. FRIDAY, M.D.

BURLINGTON

The hemorrhage associated with abortion is produced essentially in the same manner as that which occurs later in pregnancy, in placenta previa and abruptio placenta. The term *abortion* applies to the termination of pregnancies of 20 weeks' duration or less. The incidence is about 10 per cent, and we are concerned primarily with imminent or incomplete abortions.

Although the magnitude of blood loss may be alarming and may require prompt treatment, this complication does not frequently provoke a degree of concern comparable to that which is aroused by the other types of complications in pregnancy. Certainly, the few maternal deaths that result from abortion are usually attributed to infection, rather than to hemorrhage.

The standard procedures of management—including accurate diagnosis, blood transfusion, antibiotics, oxytocics and surgery—have reduced the hospital stay, the morbidity, the disability and the mortality rates. Transfusion is such a necessary part of therapy in many of these patients that the routine cross-matching of blood upon admission to the hospital is a desirable procedure, even if hemorrhage is not alarming at that time.

At Jefferson-Hillman Hospital, a study of 342 incomplete abortions revealed that 54 per cent were given transfusions and 55 per cent were curetted. Of 454 patients at Grady Memorial, 42 per cent received blood, and only 10 per cent were curetted. The first of these studies was directed toward evaluating the use of antibiotics in abortion, and in the study made at Grady, the interest lay in determining a non-operative termination of the abortion.

In my own private practice during the past few years, I have hospitalized 139 patients with the final diagnosis of incomplete abortion, and six patients with missed abortion. I have had no experience with hypofibrinogenemia in missed abortion. The charts of this small group of 145 patients were studied. Other patients with threatened abortion, hydatid mole and ectopic pregnancy—36 of the latter, one of which was an ovarian pregnancy—were not included in the survey, but I mention them as a means of pointing out the occasional difficulty one faces in making an accurate diagnosis.

The following information was obtained from the 145 charts—almost all incomplete abortions. Blood transfusions were given to 55 (31 per cent) of the patients. Only three women received more than 1,000 cc. of blood. Curettage was done on 101 patients (70 per cent). Of the 44 patients not curetted, eight (18 per cent) returned to the hos-

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pital because of hemorrhage, and were then curetted. Two other patients had additional surgery shortly after the first procedure; one of them had a hysterectomy, and the other was operated upon for endometriosis. Pitocin drip was administered to 53 (36 per cent). Antibiotics were given to 58 (40 per cent), although fewer than 10 per cent were infected, and fewer than 10 per cent gave histories of criminal abortion.

Eighty per cent of the patients were dismissed from the hospital in five days or less. Longer hospitalization was required for those patients with an uncertain diagnosis or with infection, and for those who desired more rest.

In conclusion, a satisfactory management of hemorrhage in abortion may demand early diagnosis, oxytocics, antibiotics, curettage and blood transfusion. The small number of cases on which I have reported this afternoon do not permit any startling deductions. However, I was surprised to note that of 44 patients who had been dismissed from the hospital without being curetted, eight returned with retained tissue and hemorrhage. Perhaps a more frequent use of the curet would be justified.

Discussion

Dr. Cecil W. Seibert, Waterloo, moderator: I was interested, Dr. Randall, in what you said about the incidence of a pelvic mass in cases of ectopic pregnancy. I haven't collected any figures, but it is not my impression that I don't encounter a mass so often as you have indicated I should. Were you talking about examinations under anesthesia, or about office examinations?

Dr. Randall: I was speaking of the examinations that are performed immediately after patients are admitted to the hospital. You must understand that at the S.U.I. Hospitals we don't see so many acute ectopics as you do out in the state. Many of our ectopics are of the chronic type, and possibly that is one reason why we are able to feel a mass rather commonly.

Dr. Seibert: In many of the ectopics whom I see, I can't feel a mass even under anesthesia.

How frequently do you put in a needle and discover you don't have an ectopic after all? I'll confess I do fairly frequently.

Dr. Randall: We recently reviewed almost 200 cases and found that cul-de-sac puncture had been positive in 91 per cent. Now in the other nine per cent there were some false negatives, but there weren't any false positives.

Dr. Seibert: I put a needle into the cul-de-sac even in what I think is an incomplete abortion, because one time years ago I curetted what I thought was an incomplete abortion and removed a nice piece of decidua. Then about three in the morning, a few days later, I had to get up so as to get the patient out of shock and take out the ectopic

which I should have removed the first time. Thus, if there is any question in my mind, I don't hesitate to put a needle into the cul-de-sac during the patient's initial hospitalization.

Dr. Hesseltine, we haven't said very much about ordinary postpartum hemorrhage, though it is an extremely important type of hemorrhage. There is the immediate postpartum hemorrhage, of course, and then there is the so-called "delayed" postpartum hemorrhage. Will you tell us how you manage both of these types?

Dr. Hesseltine: Immediate postpartum hemorrhage, as you know, can result from three things: (1) retention of placental tissue; (2) atony, which is a faulty mechanism of contraction; and (3) laceration of the uterus or birth canal. For accurate diagnosis, a careful intrauterine examination as well as a survey of the entire cervical area and vagina is necessary to exclude laceration and retention of placental tissue.

The use of anesthesia may contribute to uterine relaxation after the anterior shoulder is freed. To offset this factor, we use oxytocic substances, and our preference is pitocin. After the intravenous administration, we wait about a minute before proceeding with the delivery. This method shortens the third stage and reduces blood loss. After the delivery, if the uterus does not contract, there almost always is no response to a repetition of the oxytocic drug. Thus, one must be prepared for more definitive action.

In recent years, perhaps we have departed a little too far from the intrauterine pack. We don't use it as we did 20 years ago, but there still is an occasional use for it. The pack does not control uterine bleeding from uterine-wall lacerations or broken arteries. Furthermore, deep anesthesia and particularly ether can interfere directly with uterine contractility. If there is excessive bleeding through a properly placed uterine pack, it may be necessary to remove the uterus to save a life. The trauma and blood loss consequent to the removal and replacement of packing may jeopardize the patient's life.

There is an occasional patient who has bled excessively with each prior delivery and without an explainable cause. Such a history is helpful to the physician in preparing for a recurring complication. Preparation for such a recurrence may circumvent severe blood loss and shock. With shock, one tends to get relaxation of the uterus again, and with that relaxation further bleeding. Thus a vicious circle commences.

These situations must be looked at critically. I'd like to say just one more thing. It is very easy to do Monday morning quarterbacking on these cases. The doctor who sees the patient at the critical time has to exercise his judgment in diagnosing the cause of the difficulty and in prescribing management. Later, when additional information has become available, he may conclude that another procedure would have been preferable.

Now, I should like to speak of the late post-partum hemorrhage for a moment. We used to think that these hemorrhages that occurred as long as 20 days after delivery were the result of retention of placental tissue. Some of them have that cause, but in our institution the majority of such cases apparently bleed from the placental site. As you know, the placental site heals from the outer edges inward, just as burns or skin abrasions do. Microorganisms may digest out a clot, and thus cause bleeding. These cases require curettage so that one can be sure that all placental tissue is out. In some instances, a pack will be necessary to control further bleeding.

Some of these patients will become febrile, and may need antibiotics and other appropriate therapy. Unless there is fever, we do not use antibiotics. The whole situation is becoming increasingly complex as a number of organisms develop resistance to such agents.

Doctor in the audience: I should like Dr. Friday to comment on the use of drugs in saving some of these miscarriages or abortions.

Dr. Friday: My subject was hemorrhage in abortion, and since in threatened abortion there is minimal hemorrhage, I said nothing of that aspect of the problem.

I am almost willing to treat a threatened abortion in whatever way my patient tells me she wishes to be treated. The available statistics fail satisfactorily to endorse any of the products or technics designed to save the pregnancy, and indeed in most instances the fetus has already died or the placenta is already partially detached by the time that the first bleeding occurs. Thus, any therapy that one might undertake is useless. Unless the hemorrhage is alarming, I allow the patient to stay at home. If I have never examined the woman and she tells me over the telephone that she has missed a period or two, I call her in for an examination within a few hours, for otherwise I can't know the diagnosis. Even afterwards, I sometimes can't.

After a day or two of rest at home, if the patient apparently is still pregnant and has not converted a threatened abortion to an incomplete one, I am more willing to treat her with some of the drugs that are available.

Dr. Seibert: My own feeling is that the vast majority of patients with so-called threatened abortion are actually inevitable abortions when they first manifest symptoms. In other words, the onset of bleeding is an indication of a separating placenta, and the placenta is separating because it is already dead.

If such a patient calls me on the telephone as many as three times, I put her into the hospital. Otherwise, she is sure to keep calling me every 15 minutes. As for the various products to which reference has been made, let me say that I think one should do a sterile vaginal before using any of them. I have known of instances in which a patient has lain in the hospital for two weeks and

has been given \$100 worth of drugs for no better purpose than to save a piece of necrotic placenta inside the half-dilated cervix.

Doctor in the audience: Do the members of the panel believe in the routine use of curettage after an abortion?

Dr. Gardiner: I do not believe in the use of curettage in, let us say, spontaneous abortions that appear to be complete. Obviously, if one felt that the abortion was incomplete, he would go ahead and do the curettage.

Our procedure is as follows. The patient is admitted to the hospital, and a sterile pelvic is performed. If the cervix is closed, if there is no significant bleeding and if there is no cramping, we allow her to be treated conservatively. If the cervix is partially open, there may be tissue at the cervical os. If she is not bleeding extensively, we put her to bed, may give her an intravenous pitocin drip and watch carefully for the passage of any further products of conception. If the next morning or after 24 hours of hospitalization, the patient has no more cramping and no more bleeding, and if a sterile vaginal reveals that the cervix is definitely closing down, we give her ambulatory status for another 24 hours and then let her go home, provided there is no more bleeding or cramping.

It has been our experience that a patient with an incomplete abortion will continue to bleed or to spot. She will have continued cramping, and the cervix will not definitely clamp down. For such an individual, a D&C is performed after 24 or 48 hours. Our experience has been that about two-thirds will need a D&C; that one-third won't; and that this particular method of management is an eminently successful means of differentiating between the two groups.

Dr. Randall: When one of our patients has passed tissue, no curettage is done if we feel that the abortion has been complete. Certainly if we have any feeling at all that the process has been incomplete, the uterus is curetted. I think our practice has to be a little different from that of doctors in private practice, however, since our patients come to us from considerable distances, and greater inconvenience would result if it were necessary for any of them to return for a curettage.

If we have any feeling at all that an abortion has been incomplete, a curettage is done. On examination of the tissue, if the sac looks to be complete, then of course we don't.

Dr. Hesseltine: So often a patient is put to bed and is kept perfectly quiet. Thus at rest, she has no bleeding. Then she reports to us that every time she goes to the bathroom she bleeds actively. By getting up, she has simply "tipped the bottle upside down," thus allowing the accumulated blood to escape.

Now, let us get back to the subject of curettage. On my service at the Chicago Lying In Hospital, a curettage is done on every patient who has aborted. We can't be dependably certain that all

placental tissue has been expelled. We have made curettement routine because a sufficient number of patients have come back with bleeding, and some who return are even more acutely ill than on their former admissions. Moreover, we believe that curettage shortens the time for healing of the placental site. In a few patients, polypi and other tissues have been removed.

We curet patients irrespective of febrile or afebrile situations. There have been enough studies to show that curettage is safe and actually shortens the time the patient spends in the hospital. There is a potential risk of perforation of the uterus, but the dangers involved in waiting are greater. When the patient is febrile, we use a combination of antibiotics. In our white patients, we use penicillin (1,200,000 units) and streptomycin (4 mg.) daily. Streptomycin is not used for more than five days. In our colored patients, we use Terramycin in place of streptomycin, for we have found it to be a better therapy.

In cases of incomplete abortion, all of us should complete the process at the earliest opportunity, for in abortion—as in labor—bacteria may invade the uterus rapidly and in great numbers. We would rather go in and remove necrotic or dead tissue and have healthy tissue there, than to wait until the cavity is teeming with microorganisms.

Doctor in the audience: I should like Dr. Hesseltime to tell us how he distinguishes between a threatened abortion and an incomplete abortion.

Dr. Hesseltime: My crystal ball isn't so clear as to make me infallible.

A patient who is bleeding but has not passed tissue typical of placenta or fetus must first be considered as a threatened abortion. If bleeding becomes alarming, one must interfere to protect the patient, and in this event the fetus has either been expelled or has succumbed.

In those cases in which the bleeding is no more than a menstrual flow, one must start with treatment for threatened abortion. We don't use the endocrinal therapies after bleeding has started because the placenta has already separated somewhat. After following the threatened abortion case for from four to seven days, depending upon the amount of bleeding, one may decide what course to undertake next. One can't say specifically how many days one needs to wait in all cases. Rather, the decision has to be made on the basis of the amount of blood loss and the changes in the size of the uterus. If one has seen the patient previously and thus has previously noted the size of the uterus, the fact that the uterus is no larger or smaller will constitute strong supporting evidence of loss of fetal life.

All of us should remember that we must never jeopardize a pregnancy unnecessarily.

Doctor in the audience: What can one do when he has a positive frog and a closed cervix, and would like to curet the patient and send her home? The laboratory procedure won't permit him to do so, and one wouldn't curet such a patient unless

he had tissue in his hand to prove that she had aborted.

Dr. Hesseltime: We don't do the frog test. We don't trust these tests since placental tissue gives the same response.

Dr. Seibert: Let's assume that a particular patient has a very early pregnancy, rather than one that you have watched for three or four months. Do you curet any of such patients in whom the cervix is closed? I don't. If the cervix opens up so that I can get my finger through it on a general examination and if I can feel tissue in there, I go ahead and curet.

Dr. Hesseltime: Don't forget the possibility of ectopic in these patients. Even though there may be little or no cervical dilatation, a missed abortion may exist and bleeding may occur with an intact "ovum sac." For these and other reasons, one must look at the overall picture. We don't rely upon dilatation of the cervix, necessarily, as an indication for active therapies. Rather, we look for the blood loss, the size of the uterus and the amount of decrease in hemoglobin.

I don't object to biologic tests, but the trouble with them is that they confuse the picture rather than clarify it. Any retained placental tissue may be responsible for a false-positive test. If hospital regulations require such tests, then there is no choice left to the physician. Many of these patients exhibit hormonal levels compatible with normal pregnancy, though we know they don't have normal pregnancies. In our institution, we insist upon enough confirmatory evidence on which to chart the course of action.

Dr. Seibert: The biologic test for ectopic pregnancy, in my personal opinion, is absolutely worthless. I see many patients with ruptured ectopics, though their physicians have denied the possibility of any such thing on the basis of negative Friedman tests. The Friedman test goes negative very rapidly, for as soon as the ectopic ruptures, the chorionic tissue is dead and the test goes negative. It can be a booby trap.

Doctor in the audience: I'd like to know how the members of the panel feel about packing the uterus. How often do they find one that needs to be packed when they have done a curettage after an incomplete abortion?

Dr. Friday: Hardly ever.

Dr. Gardiner: At our hospital, one of my associates never does and I always do. We can't tell the difference between his results and mine.

Dr. Randall: Almost never do we pack the uterus following a curettage for incomplete abortion. There are variations in the amounts of bleeding that one encounters following a curettage. If an infected incomplete abortion is curetted, severe bleeding is sometimes encountered. If the uterus is not infected, the patient usually doesn't bleed very much. But once the uterus has been cleaned out well, bleeding stops and packing is unnecessary.

Dr. Hesseltime: We pack the uterus only when there is sufficient bleeding to require it.

Dr. Seibert: I do about as Dr. Randall does, but several of my colleagues who don't pack at all I am sure get along just as well. Sometimes, I think, I have perpetuated bleeding by putting in a pack. In cases where there is quite a bit of tissue and the uterus is soft, I am not sure that I have got all of the tissue, but I'm not very anxious to curet endlessly. Under such circumstances, I put in a pack and then take it out after 12 hours. When I remove it, I almost always find bits of placental tissue clinging to it.

Doctor in the audience: What have you to say about packing postpartum hemorrhage?

Dr. Donnelly: Of course you understand that I'm not a clinician, but I'd like to comment on this point. I mentioned that we had six postpartum-hemorrhage deaths in Iowa during the period covered by the survey I summarized for you. In four of those cases there had been no inspection of the uterine cavity. I think four of the patients were packed. One of the women was in labor on admission and was stimulated by means of two intramuscular doses of pitocin of five minims each. After the second injection, she had one contraction, expelled a 9 lb. 6 oz. baby, and hemorrhaged. Another patient was a multipara who bled all night after delivery, according to the nursing notes. At 7:30 the next morning, she was put up on shock blocks, but the physician wasn't notified until 9:30, two hours later. This patient was later packed, ineffectually, and then a hysterectomy was performed. She died 15 days later from an embolism.

In these cases that end fatally, we seem to see that packing has been used without a prior inspection of the uterine cavity, and apparently the packs have not helped at all.

Doctor in the audience: When the cavity has been inspected and palpated, is the uterus then packed?

Dr. Hesseltime: Before packing, I like to do the procedure which Dr. DeLea once described. With one hand in the uterus and the other hand on the abdomen, one can do a simultaneous massage. Frequently this stimulation causes contraction of the uterus to the degree that an intrauterine pack becomes unnecessary.

If one is teaching obstetrics, I think it is essential to teach the use of the pack, but as I said a while ago, we have largely abandoned its use. That is not to say, however, that there aren't instances in which packs serve a good purpose.

Dr. Randall: I should advise that a patient be packed just once. I know that the subject is controversial, but I would at least pack the uterus and also the vagina. Then, if you have done an efficient job and the patient bleeds thereafter, I think you shouldn't remove the pack and then repack the patient. Packing more than once traumatizes the vagina too much, and if the first pack hasn't been effective, there is little chance that the second one will be.

Dr. Gardiner: We never use a pack in a uterine atony. We use a pack occasionally if the uterus is firm and well contracted, if there still is some bleeding and if we are sure there are no placental fragments and no lacerations. We assume that there is just some bizarre type of bleeding from the placental site, in the absence of atony.

The few times when we have packed in the presence of atony, we have always had bleeding through the pack. In the packing of a patient with incomplete abortion, I pack against a firm type uterus. I do all of my D&C's in cases of incomplete abortion with a pitocin drip going, and it certainly reduces the amount of bleeding and gives one a firmer organ against which to work.

In response to an earlier question, I said that I always pack, but I should amplify that statement by adding that I often remove the pack after only about two minutes. The pack, then, serves as a check on my work, for I look to see whether there is any fragment of placental tissue that has come out with it.

Dr. Friday: I do not pack. In a case of uterine atony, I inspect the birth canal from without inward, finally palpating the interior of the uterus. I also look for lacerations and residual tissue. While I am doing this, the blood technician has been called, and the nurse is setting up a blood transfusion unit with saline and a large-gauge needle, and she has put pitocin into the bottle. By the time I have finished inspecting the vaginal canal, palpating the interior of the uterus, looking at the cervix and massaging the uterus from within and without, the pitocin is ready to start as a drip, and I have finished all that I am going to do scrubbed. Then I start the drip with a large-gauge needle, continue the massage of the uterus, and await the blood, while the small tube of blood is fastened to the wall for observation to see whether it clots. If the blood doesn't clot within 30 minutes, in addition to starting the blood, I give the patient fibrinogen. The short bit of work at the time of the hemorrhage, plus the pitocin drip, plus the blood, plus mechanical massage, plus fibrinogen if necessary seem to obviate the need for packing.

ANNUAL MEETING OF MEDICAL ASSISTANTS

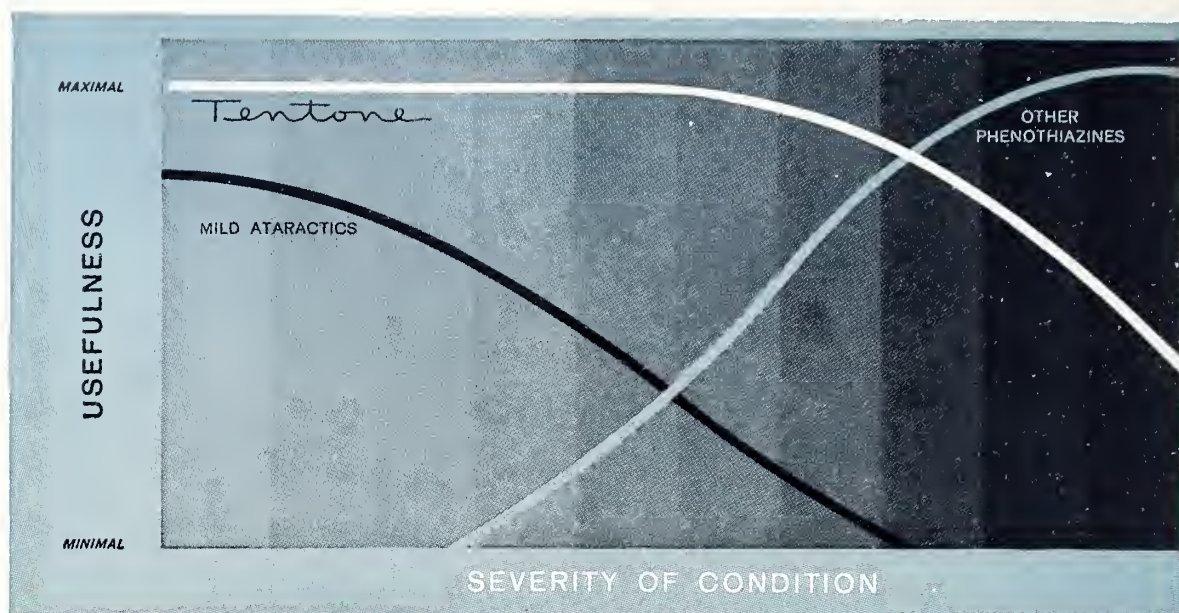
The Iowa Association of Medical Assistants will hold its third annual state convention in Ottumwa, May 15-17. The highlights of the sessions, at Hotel Ottumwa, will include a panel discussion by four doctors on the topic "Professional Ethics and You;" a luncheon address by Dr. Fred Sternagel, of West Des Moines, a member of the Advisory Board of the American Association of Medical Assistants; a panel discussion by two doctors and two insurance men; and a feature entitled "A Page From a Medical Assistant's Diary," in which four letters from medical assistants will be read and discussed by a panel of four physicians.

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SUMMARY OF CLINICAL FINDINGS

A PREVIOUSLY HEALTHY 39-year-old male was admitted to University Hospitals approximately three hours after being injured in an automobile accident. When the accident occurred, he had been asleep while sitting in the right front seat of the car. The other occupants had been killed instantly. He could not recall crashing, but he estimated that he had been unconscious for about 30 minutes immediately afterward. After regaining consciousness, he complained of needing more air. His referring physician stated that the patient had been taken from the accident to a local hospital, where "vital signs" were reported as normal. His multiple lacerations were sutured, a splint was applied to his right forearm, oxygen was given him, and he was transferred to this hospital.

The patient was alert, cooperative and oriented. The blood pressure was 108/80 mm. Hg., the pulse rate was 150 and the respirations 56 per minute. Flaring of the nasal alae was noted, but there was no cyanosis. The skin was warm and dry. The pupils were pinpoint, and they reacted slightly to light. The trachea was deviated to the right. The right rib cage was crepitant, tender and depressed. It moved paradoxically with respiration. Breath sounds were heard on both sides. The abdomen was flat and soft inferiorly, but muscle spasm was noted in the right upper quadrant. No bowel sounds were heard. Multiple lacerations were noted on the face and extremities. Compound fractures of both bones of the right forearm were evident.

The patient's hemoglobin was 13.0 Gm./100 ml., and his white blood cell count was 14,000 per cu. mm. He voided 220 ml. of clear urine, which revealed 3+ albumin.

Roentgenograms were made of the chest, abdomen, right forearm, both hips and cervical spine. These revealed no fractures except for the forearm and chest. The fractured arm bones were reduced and placed in a cast.

A neurosurgical consultant found no evidence of central nervous system dysfunction, but advised further observation.

Because of the "flail chest," tracheotomy was thought to be indicated, and that procedure was begun approximately 2½ hours after the patient's admission. Local anesthesia was used. At the beginning of the procedure, the patient's blood pressure was 90/60 mm. Hg., his pulse rate was 172, and his respirations were 66 per minute. At the termination of the operation, there was no evidence

of cardiac activity. The thorax was opened immediately so that manual compression of the heart might be started. It was then discovered that the diaphragm had been ruptured and that the stomach had been displaced into the thorax. After 35 minutes of manual artificial circulation and respiration, the heart resumed spontaneous activity. The blood pressure returned to 100/60. One unit of whole blood was given. The rent in the diaphragm was repaired, the chest was closed, and the patient was taken to the postoperative ward. There, his respirations were inadequate, and his blood pressure fell. Artificial respiration and continuous norepinephrine infusions were used. The patient expired 2½ hours after leaving the operating room.

SUMMARY OF CLINICAL DISCUSSION

Dr. John A. Gius, Surgery: First, I should like to emphasize that trauma due to automobile accidents is an important public health problem. I have here a clipping from the IOWA CITY PRESS-CITIZEN of January 3, 1959. It states that Iowa failed to reach its goal of "saving 100 lives in 1958." It had been hoped that the "point system" and other measures might reduce the 1958 highway fatalities by at least 100 from the total for 1957. The number of lives lost in Iowa traffic accidents during 1958 was 596—94 fewer than in 1957.

The magnitude of the problem is also indicated by statistics that have been published by the National Safety Council. During the year 1954, for example, there were 54,000,000 automobiles on the nation's highways, and there were 5,200,000 accidents—approximately one accident during that year for every 10 cars in operation! About 1,500,000 people were injured—thousands of them were totally and permanently disabled—and about 38,000 were killed! The importance of the traffic accident problem is obvious, and it concerns everyone.

Now to get to the problem at hand. In keeping with the usual clinical histories of accident cases, the protocol is very brief and to the point. Here we have a 39-year-old man who probably had been in good health prior to the time of his injury. The fact that the other occupants of the car were killed instantaneously is an indication of the forces involved in this particular accident. We understand that the injured man, who was sitting next to the driver, was asleep at the time the accident occurred. The hazards related to one's position in a car are well known, I believe. We are not told the time of day when the accident occurred, the events

immediately preceding the accident, nor whether the patient was lying inside or outside the car when he was picked up. Such information would have indicated to some extent the possible magnitude of the injury he sustained. The protocol doesn't state that the patient was unconscious for 30 minutes following the accident, though it leaves that implication. Apparently he didn't lose consciousness again. This evidence points to brain damage, and the transient period of unconsciousness suggests an element of cerebral concussion at least. When a passenger is in the front seat next to the driver, it is probable that his head will hit against the dashboard, the windshield or perhaps even the roof of the vehicle when a rapid deceleration takes place. Thus, he will sustain head and face injuries as well as neck injuries which are often associated with brain, cord and peripheral nerve damage.

Apparently the most pressing problem following this accident was shortness of breath. There was no cyanosis, however. The patient received first aid at the local hospital. His face wounds, head wounds, etc. were cleaned and sutured. A splint was applied to his fractured right forearm, and oxygen therapy was started before he was transferred to the University Hospitals. On arrival here, three hours later, there were obvious serious disturbances in his pulmonary and cardiac functions. His pulse rate was 150 per minute, and his respiratory rate was 56 per minute, which again is too rapid and probably was too shallow for efficient ventilation. As stated before, there was no cyanosis. Everyone knows that cyanosis is an important sign of respiratory insufficiency, but far fewer people know that severe asphyxia is possible without cyanosis.

The patient's skin was warm and dry. In existing or impending shock, the skin is likely to be cold and moist, mottled, or at times perhaps pale. The absence of these changes may suggest that compensatory mechanisms are maintaining a certain degree of hemodynamic balance. The pupils were pinpoint and reacted to light. I presume that both pupils were round and equal in size, or normal. The fact that they were constricted suggests that the patient had received morphine, though that fact has not been recorded in the protocol. In view of the history of unconsciousness with probable brain injury, and since there was respiratory difficulty, we might question the use of opiates. However, there may have been overriding indications for their usage.

On examination of the thorax, crepitation was noted in the right rib cage, but I'm not sure from the description whether crepitation was due to the rubbing together of the fractured rib ends or to air in the subcutaneous tissues, or to both. As you know, subcutaneous emphysema also gives the crepitation sign. In any event, the right hemothorax had been very severely traumatized. It moved in a direction opposite to the left during

breathing. That is, when the left side moved outward during inspiration, the right side moved inward, and on expiration when the left side moved inward, the right side moved outward. This is called "paradoxical respiration," and results from an instability of the supporting thoracic wall, usually as a result of extensive fractures of the ribs and sternum. Paradoxical respiration indicates a loss of ventilatory efficiency in the involved hemithorax, as well as an upset in the total intrathoracic pressure relationships, the integrity of which is essential to an adequate gaseous exchange in the lungs. Paradoxical respiration, therefore, can lead to or aggravate anoxia and shock.

We are told that breath sounds were heard on both sides, but I'm not sure that such observations as that have any great significance. The science and art of physical diagnosis are not stressed today as they were formerly, and few are expert at them. For better or worse, we have come to rely more upon the x-ray and less upon percussion and auscultation of the chest.

We note that the abdomen was flat, but that there was some muscle spasm in the right upper quadrant. Because the right chest had been severely damaged, the muscles on the right side of the abdomen could be expected to be tight, since they too are innervated by the intercostal nerves. But these signs may also have been due to an injury to the muscles themselves or to the underlying abdominal organs, or both. In fact, it seems to me that we now have to think in terms of injury to all regions, organs and tissues of the body. In the chest, for example, there is the possibility of injury to the thoracic wall, the lungs, the trachea and bronchi, the diaphragm, the mediastinal structures, the heart and great vessels, and the esophagus. In the abdomen, the solid organs are most likely to be injured (liver, spleen, kidneys and pancreas). The hollow organs of the intestinal, biliary and urinary tracts are less susceptible to damage. Injury to the skeleton is indicated by the fracture of the arm and ribs, and possibly other bones not yet examined. Head injury is indicated by the history of unconsciousness, as well as by the mention of numerous contusions and lacerations about the head and face. It is clear, then, that in this patient as in most others who have suffered extensive trauma, the injuries were multiple and widespread. They tended to involve all areas in one way or another. The physician must therefore use great care lest he look so hard at obvious injuries that he overlook the hidden but often more important ones.

I don't get very much help from the laboratory results. Even when the patient was bleeding internally, the hemoglobin wasn't lowered until hemodilution occurred several hours later. One might think that blood volume determinations would be helpful in following the changes that occur after trauma, but such measurements are currently impractical. The urine findings suggest

that there had been no gross damage to the urinary tract, but I am unable to explain the 3+ albumin.

X-ray studies were made shortly after the patient's admission, but I question whether they were necessary or helpful. Many of the injuries were obvious, and the movement and positioning that are necessary if one is to get good x-rays may do more harm than the completed films will eventually justify, in a patient who has been severely injured. But regardless of these considerations, x-rays were made of this man's chest, abdomen, right forearm, both hips and cervical spine. They were negative, aside from showing the known fractures of the forearm and the ribs.

Now, there is some suggestion in the protocol that the physicians concerned in this case may have had "tubular vision," or confined their attention to one narrow area. Since the patient had a fractured arm and because all teaching emphasizes the need for early reduction and immobilization, they went ahead with those procedures, regardless of the patient's more pressing problems.

Thus far, no changes in the patient's condition had been observed. The neurosurgical consultant who saw him detected no evidence of central nervous system dysfunction, but advised further observation. His words must have been reassuring to all, but certainly the possibility of severe central nervous system damage could not be dismissed altogether.

About this time, because of increasing difficulties in ventilation, a tracheostomy was advised. I assume that according to the local custom another consultant was called in to do the tracheostomy, although the protocol doesn't say so. At this point, 2½ hours had elapsed since the patient's admission, and about 5½ hours since the accident. All of the recorded "vital signs" indicated that there had been some deterioration in the patient's "steady state." On admission, the blood pressure had been 108/80 mm. Hg. Two and a half hours later it was 90/60. The pulse rate initially had been 150 per minute, and later it was 172. The respirations are reported to have been 56 per minute on both occasions.

Now under elective conditions, tracheostomy is generally a simple procedure. But it can be difficult and pretty bloody if the patient is thrashing around and in acute respiratory distress. Here, local anesthesia was being used. The tracheostomy was performed, and at the completion of the operation, there was no evidence of cardiac activity. Cardiac and pulmonary activities may have ceased simultaneously. In desperation and under less than optimal conditions, the surgeons hurriedly opened the left chest and found not only an absence of cardiac activity but also a completely unexpected tear in the diaphragm, with herniation of the stomach into the left hemithorax.

As I have already said, rupture of the diaphragm is a fairly common complication in severe trauma to the chest. In this patient, expansion of the left

lung was partially prevented by the herniated viscus. Thus, bilateral interference with pulmonary function existed, and the resultant anoxia set the stage for cardiac arrest. Therefore, impairment of pulmonary function, anoxia, pulmonary arrest and cardiac arrest are predictable sequelae.

Cardiac massage for about 35 minutes resulted in some return of spontaneous cardiac action and an adequate blood pressure (100/60 mm. Hg.). Subsequently, the patient was given a blood transfusion, the stomach was reduced into the abdomen, the hernia in the diaphragm was repaired and the chest wall was closed. Artificial respiration and vasopressors were required to maintain the blood pressure for the time being. But as is often the case, the patient had too much wrong with him—too severe trauma, too profound and too prolonged hypoxia, too extensive manipulation and too extensive surgery, too much treatment directed toward side issues, and almost certainly too many doctors. He died about eight hours after the injury, from cardiorespiratory failure.

The first important point here is that injury to one part of the body is likely to be associated to injury to one part of the body is likely to be associated with injuries to other parts. There is a direct relationship between the magnitude of the forces and the degree of the injury. Violent forces mean severe and extensive damage. All areas of the body need to be looked at perceptively. Priorities of treatment must be established and followed, and the less important issues must be avoided. Look for head injury, but bear in mind that it may not manifest itself immediately. Neck injury is likely in cases where there is head injury. Consider also the possibilities of thoracic wall, lung, diaphragmatic, mediastinal and heart injuries and dysfunctions. Trauma to the region of the heart may produce severe contusion, with signs and symptoms resembling those of coronary occlusion. Abdominal injury is always a distinct possibility, and is very difficult to assess when combined with thoracic injury. Examination of the skeletal system by radiographic methods is necessary, but x-rays are often better deferred until higher-priority items that endanger the patient's life have been settled. Furthermore, damage to soft tissues in fractures or possible fractures does not show up on the x-ray.

Regarding trauma and care of the injured, then, one might paraphrase a popular saying: "Enjoin yourself; it's wider than you think!"

Dr. H. W. Fischer, Radiology: First, I should like to point out that all of our films of this patient except one were taken with the patient lying in one position. Good radiography can be accomplished without aggravating a patient's injuries.

One of our films, taken with the patient lying on his back, showed multiple rib fractures on the right, with extensive subcutaneous emphysema. In the left lower chest, there was a large density with a curved upper border.

A second film, designed to show detail in the

same area, didn't require any additional moving or positioning. It showed the subcutaneous emphysema in the chest wall, going up into the neck.

A lateral film of the neck was probably also taken with the patient flat on his back. It was not necessary to turn the patient on his side for this. There was no evidence of bony injury in the neck, but again we saw the air from the chest injury dissecting up into the tissue planes so that there was paravertebral air. A chest film also showed aspiration of fluid or blood (Figure 1).

A film of the pelvis was negative. The film of the abdomen showed again the fractured ribs and subcutaneous emphysema. For the lateral decubitus view (Figure 2), it was necessary to turn the patient on his side, with his injured side up and his left side down. In it, we could see that there were fluid levels in the left chest going far above the normal position of the left diaphragm.

We had a choice of two conclusions: (1) that this was an abnormality of long standing, or (2) that it had occurred in relation to the accident. Of course, diaphragmatic rupture is fairly common with severe trauma of this nature, and I think we could conclude that the diaphragm had been torn, and that the stomach and possibly additional hollow organs were in the left chest.

The arm, before and after the setting of the fracture, was shown in the remaining films.

Dr. Frederic W. Stamler, Pathology: Aside from a great number of superficial abrasions and lacerations over much of the skin surface of the body, the injuries found at necropsy were essentially those that have been described in the protocol and shown in the x-rays. There was no obvious traumatic injury to the brain, although the brain was swollen and edematous. This may have been a result of the initial trauma, or it may have been the result, largely, of later complications such as anoxia associated with cardiac standstill, and chronic hypoxia associated with the respiratory difficulty.

In addition to the chest injuries which have been described, there was one other factor which probably added considerably to the pulmonary dysfunction, and that was the patient's having aspirated rather large quantities of gastric contents. His trachea and both lower-lobe bronchi were rather completely filled with this material at the time of autopsy, and he had actually drawn much of this aspirate into the finer radicles of the bronchial system, and beginning pneumonia was associated with the aspiration of gastric contents.

Recognizable food particles, including vegetable material and a few meat fibers occluded one of the bronchi. There was also a large amount of sloughed bronchial epithelium and mucus containing numerous blue-stained bacterial masses, indicative of bacterial contamination of the lungs. A section of lung from a pneumonic area showed a small bronchiole in the center which contained a mass of aspirated vegetable matter. The wall of the bron-



Figure 1. X-ray of chest shows fractured ribs on the right and abdominal contents in the left chest.

chus had undergone extensive damage, and there was a rather intense inflammatory reaction in all the surrounding lung tissue. The alveoli were filled with exudate and looked very much like the usual early stage of acute pneumonia. There were scattered bacteria throughout this area, but I think it probable that in addition this may have been a chemical pneumonia in response to the aspirated gastric contents.

The brain had the typical appearance of brain edema. This was characterized by a particular haloed effect around the neurons and the vessels. The vessels showed greatly enlarged perivascular spaces due to accumulation of fluids in those areas. There was a beginning satellitosis of glial cells, with a few phagocytes about some of the damaged neurons, but the conspicuous thing was the great swelling and accumulation of clear fluid. It was difficult to be sure whether this fluid was within the cytoplasm of the cell or was pericellular in location. In some instances, it appeared to be definitely within the cells. The early neuronal degeneration may have been the result of the anoxia sustained during cardiac standstill, but the time interval between the episode of cardiac standstill and death of the patient was rather brief for such tissue changes to develop.

The liver showed fatty metamorphosis of the central lobular zones. This was a fairly well advanced fatty change, and I think it probably had its inception before the accident.

There is one other finding worthy of mention. The stomach was unusually large and contained about two liters of contents—partly liquid but including considerable quantities of food. There was a question of whether this represented an acute gastric dilatation, but it was thought, rather, that this finding may have been the consequence of the patient's eating a large meal just before the accident.

I think that the best explanation we have for the patient's death is that respiratory function was embarrassed to a critical extent. The chest injuries probably were directly responsible, but cerebral edema certainly was contributory.

There was a small contusion of the musculature of the heart, probably the result of cardiac massage. It was quite small, and I doubt that it was significant.

Student: What kind of anesthesia was used during the operation?

Dr. William K. Hamilton, Anesthesiology: The anesthetic was a local infiltration of procaine. The only operation the patient had was a tracheotomy. The hernia repair and the associated procedures

were performed during the asphyxia. A patient who has gone to the point of cardiac standstill is usually obtunded quite well, and doesn't need further sedation.

Student: Was this cardiac death or cardiac arrest?

Dr. Hamilton: One can argue the question, but it was decided by those in attendance that the patient had a chance of recovery, yet died quite suddenly. I shared that attitude. I think that if the facilities are present, resuscitation is something that one has to try. The patient's heart started again, but obviously the central nervous system damage was such that he didn't ultimately recover.

This patient's course emphasizes the fact that patients do die of respiratory insufficiency. We have become quite fully aware, I believe, of the necessity for controlling the bleeding and hemorrhage in accident cases, but as yet we haven't been giving enough attention to the correction of inadequate respiration. This patient, I think, died of respiratory insufficiency from having both hemithoraces crippled. I don't think we can say that he died either of a flail chest or of a diaphragmatic



Figure 2. Lateral x-ray showing fluid level in the stomach in the left chest.

rupture, but of both. Perhaps neither one of them alone would have been fatal, and perhaps together they wouldn't have been fatal if the treatment had been altered.

Two years ago, there was a report in the *JOURNAL OF THORACIC SURGERY* about a patient who had been rolled like pie dough into an eight-inch space when a diesel locomotive pushed him up against a steel furnace.* On admission to the hospital, he had 24 fractured ribs, yet he recovered and left the hospital some 30 days later, and had minimal residual disability.

I should like to talk a little about the principles of care that were followed in the case of that patient with the grand-prize number of rib fractures. From that case we can learn the correct management of the crushed or flail chest.

First of all, I think that tracheotomy was indicated in this man, and should be performed for all these patients. It reduces the resistance to the inspiration of air quite a little bit, and in a patient with a flail chest this becomes extremely important. A tracheotomy will probably reduce dead space by bypassing the oral and nasal pharynx and such areas as the upper respiratory tract. Whether this is significant or not, I don't believe one can say. Tracheotomy does allow better cleansing of the lower respiratory tract.

I think that the tracheotomy need not be done as an emergency procedure, but can be done after artificial respiration has been established through other means. An endotracheal catheter could be inserted if the necessary personnel are available, and then a tracheotomy could be done at leisure. I think that when the injury has been severe, as it was in this man or in the patient who was crushed by the diesel locomotive, tracheotomy alone is not enough. Having lost his chest wall, such a patient is unable to breathe for himself and needs artificial ventilation. Assistance of this sort does two separate things. It corrects the already occurring and advancing hypoventilation or respiratory insufficiency, and provides internal pneumatic stabilization that fixes the chest from within as other measures fix it from without. I think that a change takes place as soon as one begins to "breathe" for this type of patient by means of intermittent-pressure devices—either with the hand on an ordinary rubber bag or with a machine. There is an immediate danger. If there is a parenchymal lung leak, as is quite often the case, a tension pneumothorax will develop unless the patient is treated, and it can become fatal quite rapidly. Some means must be provided for the egress of air from the thoracic cavity, and this is routinely provided by underwater-seal drains. These devices are very effective in draining air from the lungs and preventing the development of tension pneu-

mothorax, but they must be watched very carefully.

It seems to me that when this man came here he had reached the point where further observation was not necessary. His pulse rate was very high, his respiratory rate was 56, and he had a paradoxically-moving chest with crepitation. I believe that with this evidence at hand one should (1) establish an airway; (2) prevent tension pneumothorax; and (3) ventilate artificially and then watch for improvement. Afterward, x-rays could have been taken, fractures reduced and the diaphragmatic hernia repaired. In fact, these could have been done the next day if it hadn't been feasible to do them at night.

Respiration is something that we are inclined to take more or less for granted. That is to say, physicians other than anesthesiologists are inclined to do so. Actually, the management of such a case as this is no different from the management given to thoracotomy patients every day in the operating room. The thoracotomy patient has one lung down and has a flail chest wall. He requires artificial respiration and careful attention.

Dr. J. L. Ehrenhaft, Surgery: If one looks at the chest roentgenogram, it is obvious that a rupture of the left leaf of the diaphragm had taken place. This is a treacherous type of lesion for it is often hidden as a result of its being combined with more easily apparent injuries. This patient could have had a Levin tube inserted which would have prevented aspiration of gastric contents. Aspiration apparently was the ultimate cause of the death in this patient, as the pathologists have said. All patients with prolapse of the gastrointestinal tract—usually stomach—into the chest cavity develop severe dilatation, and the gastric dilatation can be of tremendous size.

In my opinion, this patient could have been treated in the following sequence:

- (1) Respiratory exchange should have been established immediately, and I agree with Dr. Hamilton that this could best have been done by tracheal intubation and positive pressure, and not by tracheotomy.

- (2) The chest roentgenogram could have been taken later.

- (3) After the immediate emergency care had been provided, the patient could have been taken to the operating room for a left thoracotomy and repair of the diaphragmatic hernia. If any additional abdominal injuries were encountered, correction of them (splenectomy, for instance) could have been done easily at that time. Also, if the patient had a flail chest due to extensive rib fractures on the same or the opposite side, some stabilizing procedure could have been initiated at that time. A tracheotomy could have been done just prior to the removal of the endotracheal tube.

I believe that positive-pressure anesthesia and prevention of aspiration of gastric contents in this

* Avery, E. E., Morch, E. T., and Benson, D.: Critically crushed chests. *J. THORACIC SURG.*, 32:291-311, (Sept.) 1956.

patient would have prevented the cardiac arrest and all the other difficulties that were encountered.

Dr. Jack Moyers, Anesthesiology: I don't think we should leave the impression that gastric dilatation is a necessary accompaniment of diaphragmatic hernia, or that one needs to have a diaphragmatic hernia in order to have gastric dilatation. The mechanism of acute gastric dilatation in this case was not injury to the diaphragm *per se*, but respiratory distress associated with the trauma. Gas in the stomach is usually air, and doesn't just happen. It has to get there from somewhere, and it doesn't come from capillaries of the gastric mucosa. As a matter of fact, gas enters the stomach through the esophagus in a manner similar to the movement of gas into the lungs through the trachea. The dyspneic patient usually makes strong inspiratory efforts. They result in relatively strong negative pressure in the thorax, and that negative pressure is transmitted to the esophageal lumen. This is the mechanism for normal inspiration. However, when respiratory obstruction prevents the entrance of air into the lungs, or when extra pulmonary pressure precludes expansion of the lungs, it is easier for air to enter the gastrointestinal tract than to enter the respiratory system. I believe that this happened to the patient under discussion today. The stomach filled with air because abdominal structures entering the chest through the hernia limited pulmonary expansion and caused ventilation to be labored.

Gastric dilatation should be suspected in any patient for whom inspiration is difficult. Relief of the dyspnea will prevent further dilatation, and intubation of the stomach will relieve that which has already occurred.

Dr. R. Soper, Surgery: I should like to add some things which are apparent to us now, as we look back on the case, but which were quite baffling at the time. The most important thing was that we didn't diagnose the left diaphragmatic hernia. If that diagnosis had been made, we might have salvaged the patient. The x-rays were interpreted as showing a high-riding diaphragm, perhaps as a result of gastric dilatation underneath it, and/or to phrenic nerve avulsion or some other mechanism which would elevate the diaphragm.

I should like to say that several attempts were made to pass a gastric tube, but all of them were unsuccessful, meeting some sort of obstruction—or so it seemed—in the distal esophagus. The reason became apparent during the chest exploration. The esophagogastric junction was below the diaphragm, and then the stomach was acutely angulated at that point, and a twist of about 180° through a rent in the dome of the left diaphragm made it impossible for the Levin tube to enter the stomach.

Of course there were numerous other possibilities that might have caused this man's shock and other difficulties, such as ruptured liver and/or other intra-abdominal organs. There was no pneu-

mothorax clinically or on the x-rays, and consequently we felt that we could temporarily stabilize the flail right chest with sandbags. We did so. We did not feel that the degree of paradoxical motion of the right chest was such that external support was necessary at that time.

Thus, I think it comes back to the point that our most important error was in not making the diagnosis of diaphragmatic hernia. Had that been done, I'm quite sure that this patient could have been saved.

Dr. Hamilton: In the face of a paradoxically moving chest on one side, I should say that sandbagging should not be done, but I should appreciate knowing what Dr. Ehrenhaft has to say about this. The one thing we want to do is encourage the expansion of the chest, not encourage its collapse. If the case of flail chest is so extreme that it needs support, the support should be applied by means of pressure from the inside or support from the outside. The sandbagging wouldn't be indicated. In fact it might be contraindicated in the treatment of this patient.

Even without an early diagnosis of diaphragmatic rupture, this patient's respiration needed prompt and adequate support. The basic problem was the recognition of acute respiratory insufficiency, rather than the recognition of diaphragmatic rupture as its cause.

Dr. Jack Layton, Pathology: Did you receive any more details on the accident?

Dr. Hamilton: A few more were made available the next morning by two members of your department, but there is no specific information that I can find, even on rereading the chart, as to whether the patient was thrown from the car. The information is that he was asleep, and that he had abrasions of his face that would suggest his having skidded a bit on the paving, but there is no direct information in regard to this that I can find.

Dr. Layton: Do you think that seat belts would have helped?

Dr. Hamilton: Well, it would seem that they might. It sounds reasonable to me.

Dr. Robert A. Utterback, Neurology: Would oxygen be helpful in this type of situation?

Dr. Hamilton: If a patient is suffering from hypoventilation, he doesn't automatically benefit by the institution of oxygen therapy. He needs the increase in respiratory volume as well, and oxygen therapy could actually be detrimental in this regard for it might mask further development of hypoventilation and actually depress the patient's desire to breathe. In this case, I think it would be hard to criticize the administration of oxygen, and since there was a possibility of shock, oxygen was probably indicated. Dr. Ehrenhaft, what about sandbagging?

Dr. Ehrenhaft: I should like to point out one more thing about diaphragmatic hernias. Rupture of the diaphragm may become apparent at the time of the acute injury, but there are patients who

have ruptures of the diaphragm, usually on the left side, in whom difficulties do not arise until months or even years afterward. This is most likely if the rents in the diaphragm have been produced by bullet or stab wounds. Incarceration of prolapsed bowel through small rents in the diaphragm may occur a long time after the initial injury.

I agree with Dr. Hamilton that stabilization of a crushing chest injury should ordinarily not be done by sandbagging or immobilizing the chest by external pressure. Rather, it should be done either by positive-pressure breathing or by external support of the chest cage by means of traction devices. I believe that bringing the chest cage out to a normal position and stabilizing it will be a much more physiologic treatment than collapsing the chest cage against already injured and poorly-functioning lung tissue.

SUMMARY OF NECROPSY FINDINGS

Severe crush injuries of the chest were present, with bilateral, multiple rib fractures and a repaired diaphragmatic hernia. The rib fractures were so numerous as to produce essentially a flail type of chest injury. The chest injuries were associated with very extensive pulmonary collapse, and pulmonary congestion and edema. There was widespread aspiration of gastric contents, with much bronchial obstruction and early bronchopneumonia. Severe generalized cerebral edema was also

present, and probably added to the respiratory dysfunction.

Other injuries included complete fracture of the right radius and ulna, as well as very extensive lacerations, contusions and abrasions of the face and extremities.

Fatty metamorphosis of the liver was an incidental finding, apparently not related to the accidental injuries that the patient had sustained.

Death was due to respiratory insufficiency.

ANATOMICAL DIAGNOSES

Crush injury of thorax, extensive, with:

A. Multiple fractures, ribs, bilateral

B. Diaphragmatic hernia, traumatic, surgically repaired

C. Pulmonary collapse, extensive, bilateral

D. Pulmonary congestion and edema, bilateral.

Fracture, complete, radius and ulna, right

Lacerations, contusions and abrasions, multiple, face and extremities

Aspiration of gastric contents, with bronchial obstruction and early bronchopneumonia

Cerebral edema, severe

Thoracotomy, postoperative, with operative contusion of interventricular septum, heart

Tracheotomy, recent

Contusion, small, right lobe of liver

Interstitial hemorrhage, testis, right

Fatty metamorphosis, liver, moderate.

Special Attractions of Atlantic City Meeting

Military and medical preparedness for the management and care of mass casualties in case of war will feature the seventh annual National Civil Defense Conference, which will be held in Atlantic City on Saturday, June 6, immediately prior to the opening of the annual meeting of the AMA. The program, presented entirely by the Army Medical Service, will dramatize the positive action that physicians and their assistants can take in minimizing such casualties, if proper preparation has been made. The attending doctors will be given a one-day version of the Army's week-long education and training program dealing with mass casualty concepts and treatment technics. Emphasis is given to both the prevention and the treatment of nuclear-blast effects, burns and radiation injuries.

On the second day of the AMA meeting in Atlantic City, Wednesday, June 10, physicians are urged to attend a session on new concepts in aging conducted under the auspices of the AMA Com-

mittee on Aging. The meeting is designed to provide practicing physicians some procedures that they will find useful in their work with elderly patients. The subjects for panel discussions are "Diseases Among the Aged"; "Nutritional Counseling"; "Promoting Physical Fitness"; and "Motivating the Older Person."

Nationally recognized experts in their fields will discuss such points as (1) special treatment aspects of cardiovascular, neoplastic and bone diseases among the aged; (2) effects of adequate nutrition on the rehabilitation potential of the older patient; (3) variables in prescribing a physical activity program for the older individual; and (4) the effects of physical health, social adjustment and psychological functioning on motivation in the older person.

Physicians who plan to attend are invited to send questions or points for discussion to the AMA Committee on Aging, 535 North Dearborn, Chicago 10, to arrive there no later than May 27.

Coming Meetings

In State

- May 13 **Symposium on General Medicine** (Iowa Academy of General Practice and Lederle Laboratories), Fort Des Moines Hotel, Des Moines
- June 12-13 **Alumni Day** (SUI College of Medicine). Iowa City

Out of State

- May 1-3 **International Symposium on Prevention of Bacterial Resistance to Antibiotics**. Perugia, Italy
- May 2-3 **Sixteenth Annual Meeting, American Psychosomatic Society**. Chalfonte-Haddon Hall, Atlantic City
- May 2-5 **North Dakota Medical Association**. Prince Hotel, Bismarck
- May 2-6 **Florida Medical Association**. Americana Hotel, Miami Beach
- May 2-9 **Conference on International Union for Health Education of the Public**. Dusseldorf, Germany
- May 2-12 **Mediclinics of Minnesota**. Fort Lauderdale, Florida
- May 3 **American Federation for Clinical Research**. Chalfonte-Haddon Hall, Atlantic City
- May 3-4 **American Society for Clinical Investigation**. Haddon Hall, Atlantic City
- May 3-6 **Medical Society of the State of North Carolina**. George Vanderbilt Hotel, Asheville
- May 3-7 **Kansas Medical Society**. Jayhawk Hotel, Topeka
- May 3-7 **Pacific Coast Oto-Ophthalmological Society**. Hotel Riviera, Las Vegas
- May 4-6 **Louisiana State Medical Society**. Roosevelt Hotel, New Orleans
- May 4-8 **Breast & Thyroid Surgery**. Cook County Graduate School of Medicine, Chicago
- May 4-8 **Histopathology**. N.Y.U., New York City
- May 4-8 **Ophthalmoscopy**. N.Y.U., New York City
- May 4-15 **Clinical Uses of Radioisotopes**. Cook County Graduate School of Medicine, Chicago
- May 4-15 **General and Surgical Obstetrics**. Cook County Graduate School of Medicine, Chicago
- May 5 **Anesthesiology**. University of Nebraska College of Medicine, Omaha
- May 5-6 **Association of American Physicians**. Haddon Hall, Atlantic City
- May 5-7 **New Mexico Medical Society**. Mission Motel, Las Cruces
- May 5-7 **State Medical Society of Wisconsin**. Hotel Schroeder, Milwaukee
- May 6 **Fourth Annual Trauma Day**. University of Nebraska College of Medicine, Omaha
- May 6-8 **American Pediatric Society**. The Inn, Buck Hill Falls, Penna.
- May 6-8 **Symposium on Metal-Binding in Medicine**. Hahnemann Medical College, Philadelphia
- May 6-10 **Second Annual Congress on Infectious Pathology**. Milan
- May 8 **Symposium on Nutritional Problems in Medicine** (AMA Council on Foods and Nutrition). Vanderbilt University, Nashville
- May 8-9 **Thyroid Diseases (Fifth Annual Surgery, Radiology and Pathology Symposium)**. University of Oklahoma Medical Center, Oklahoma City
- May 8-9 **Society for Pediatric Research**. The Inn, Buck Hill Falls, Penna.
- May 9-15 **Medical Society of the State of New York**. Hotel Statler, Buffalo
- May 10-12 **Washington Academy of General Practice**. Longview, Washington
- May 10-14 **American Society of Maxillofacial Surgeons**. Palmer House, Chicago
- May 10-15 **Society of American Bacteriologists**. Sheraton Jefferson Hotel, St. Louis
- May 11-13 **Physical Medicine**. University of Colorado Medical Center, Denver
- May 11-15 **Introduction to Electrocardiography for General Physicians**. University of Minnesota Center for Continuation Study, Minneapolis

- May 11-22 **Board of Surgery Review Course (Part II)**. Cook County Graduate School of Medicine, Chicago
- May 11-22 **Intensive Course in Medicine**. Cook County Graduate School of Medicine, Chicago
- May 12-13 **Rhode Island Medical Society**. Providence
- May 12-14 **Mississippi State Medical Association**. Hotel Buena Vista, Biloxi
- May 12-14 **South Carolina Medical Association**. Columbia Hotel, Columbia
- May 12-15 **Femoral Arteriography**. Cook County Graduate School of Medicine, Chicago
- May 13 **Antimicrobial Therapy and the Treatment of Infectious Diseases of Childhood**. University of Oklahoma Medical Center, Oklahoma City
- May 14-16 **Neurology**. University of Colorado Medical Center, Denver
- May 15-16 **Orthopedics (University of California)**. Mt. Zion Hospital, San Francisco
- May 15-16 **Ear-Nose-Throat**. University of California, San Francisco
- May 16-18 **Practical Aspects in the Management and Treatment of Cardiovascular Disease**. University of California, San Francisco
- May 17-20 **Medical Association of Georgia**. Bon Air Hotel, Augusta
- May 17-21 **American Urological Association**. Western Section. Monterey, California
- May 18 **Fourth Semi-annual Medical Seminar (Medical Alumni Association, University of Illinois)**. Chicago
- May 18-21 **Symposium on Surgery**. University of Kansas Medical Center, Kansas City, Kansas
- May 18-22 **Proctology for General Physicians**. University of Minnesota Center for Continuation Study, Minneapolis
- May 18-22 **Symposium on Dermatology and Syphilology for Dermatologists**. N.Y.U., New York City
- May 19-21 **Massachusetts Medical Society**. Hotel Statler, Boston
- May 19-22 **Illinois State Medical Society**. Hotel Sherman, Chicago
- May 19-23 **American Association on Mental Deficiency**. Hotel Schroeder, Milwaukee
- May 20-22 **Ogden Surgical Society**. Ogden, Utah
- May 21-23 **American Association for the History of Medicine**. Wade Park Manor, Cleveland
- May 21-23 **Annual Meeting, Nevada Academy of General Practice**. Riverside Hotel, Reno
- May 21-23 **Third Annual Postgraduate Course in Geriatric Medicine** (Washington U. Medical School). St. Louis
- May 22-24 **Cardiac Arrhythmias (American College of Physicians)**. Philadelphia General Hospital, Philadelphia
- May 22-24 **Annual Meeting and Scientific Session, California Heart Association**. Lafayette Hotel, Long Beach
- May 24-29 **National Tuberculosis Association**. Palmer House, Chicago
- May 25-27 **American Gynecological Society**. The Homestead, Hot Springs, Virginia
- May 25-27 **American Trudeau Society**. Palmer House, Chicago
- May 25-27 **Minnesota State Medical Association**. Duluth
- May 25-29 **Board of Internal Medicine Review Course (Part II)**. Cook County Graduate School of Medicine, Chicago
- May 25-29 **Eighth Annual Convention, American College of Cardiology**. Benjamin Franklin Hotel, Philadelphia
- May 25-29 **General Surgery**. Cook County Graduate School of Medicine, Chicago
- May 25-29 **Hematology**. Cook County Graduate School of Medicine, Chicago
- May 25-29 **Pediatric Advances (Children's Hospital of Philadelphia and Graduate School of Medicine of the University of Pennsylvania)**. Philadelphia
- May 27-28 **First National Conference on the Legal Environment of Medical Science (National Society for Medical Research)**. University of Chicago, Chicago

- May 27-29 **Otolaryngology for Specialists.** University of Minnesota Center for Continuation Study, Minneapolis
- May 28-30 **American Ophthalmological Society.** The Homestead, Hot Springs, Virginia
- May 29-30 **Congress of the International Association for the Study of Bronchi.** Madrid
- May 30-June 1 **First International Congress on Irradiation of Endocrine Glands.** Amsterdam, Holland
- June 1-3 **Gallbladder Surgery.** Cook County Graduate School of Medicine, Chicago
- June 1-4 **American Dermatological Association.** Claridge Hotel, Atlantic City
- June 1-5 **Pediatric Surgery.** Cook County Graduate School of Medicine, Chicago
- June 1-5 **Physiological Basis of Clinical Electrocardiography.** N.Y.U., N.Y.C.
- June 1-5 **Psychiatry for the Internist (American College of Physicians).** Psychiatric Institute, University of Maryland Hospital, Baltimore
- June 1-5 **Practical Pediatric Hematology (Children's Hospital of Philadelphia and the Graduate School of Medicine, University of Pennsylvania).** University of Pennsylvania, Philadelphia
- June 1-5 **Surgery of the Colon and Rectum.** Cook County Graduate School of Medicine, Chicago
- June 1-6 **International Hospital Congress.** Edinburgh, Scotland
- June 1-12 **Surgical Technic.** Cook County Graduate School of Medicine, Chicago
- June 2-5 **Annual Meeting, Western Branch, American Public Health Association.** Sheraton-Palace Hotel, San Francisco
- June 2-6 **American Rheumatism Association.** Mayflower Hotel, Washington, D. C.
- June 2-6 **Pan-American Congress on Rheumatic Diseases.** Washington, D. C.
- June 3-7 **American College of Chest Physicians.** Silver Anniversary Meeting, Ambassador Hotel, Atlantic City
- June 4 **Gastroenterology Research Group.** Claridge Hotel, Atlantic City
- June 4-5 **American Geriatrics Society.** Hotel Traymore, Atlantic City
- June 4-6 **Endocrine Society.** Chalfonte-Haddon Hall, Atlantic City
- June 4-6 **Surgery of Hernia.** Cook County Graduate School of Medicine, Chicago
- June 4-7 **American Medical Women's Association.** Sheraton Ritz Carlton Hotel, Atlantic City
- June 4-7 **American Therapeutic Society.** Shelburne Hotel, Atlantic City
- June 5-6 **American Gastroenterological Association.** Claridge Hotel, Atlantic City
- June 5-6 **Fetal Electrocardiography.** U.C.L.A., Los Angeles
- June 5-7 **American College of Angiology, World Conference on Angiology.** Marlborough Blenheim Hotel, Atlantic City
- June 6 **American Academy of Tuberculosis Physicians.** Atlantic City
- June 6 **International Cardiovascular Society, North American Chapter.** Hotel Shelbourne, Atlantic City
- June 6-7 **American Diabetes Association.** Chalfonte-Haddon Hall, Atlantic City
- June 6-7 **Society for Investigative Dermatology.** Ritz Carlton Sheraton Hotel, Atlantic City
- June 7-13 **Third World Congress, International Fertility Association.** Amsterdam, Netherlands
- June 8-12 **Annual Meeting, American Medical Association.** Traymore Hotel, Atlantic City
- June 8-12 **Association for Research in Ophthalmology, Inc.** Atlantic City
- June 8-12 **Vaginal Approach to Pelvic Surgery.** Cook County Graduate School of Medicine, Chicago
- June 8-19 **Symposium on Modern Therapeutics in Internal Medicine.** N.Y.U., N.Y.C.
- June 9-11 **Canadian Federation of Biological Societies (Canadian Physiological Society, Pharmacological Society of Canada, Canadian Association of Anatomists, Canadian Biochemical Society).** University of Toronto, Toronto
- June 9-12 **Congress & International Exhibit of Technicians of Health.** Parc des Expositions, Porte de Versailles, Paris, France
- June 9-12 **Femoral Arteriography.** Cook County Graduate School of Medicine, Chicago
- June 9-18 **Second Summer Institute on Medical Teaching (University of Buffalo and the Association of American Medical Colleges).** Buffalo
- June 10 **Surgery—Herniae.** University of Oklahoma Medical Center, Oklahoma City
- June 11-14 **American Electroencephalographic Society.** Claridge Hotel, Atlantic City
- June 11-14 **Wyoming State Medical Association.** Jackson Lake Lodge, Moran
- June 13-14 **Society of Biological Psychiatry.** Claridge Hotel, Atlantic City
- June 14-17 **Idaho State Medical Association.** Sun Valley
- June 15-17 **American Neurological Association.** Claridge Hotel, Atlantic City
- June 15-17 **Gynecology for General Physicians.** University of Minnesota, Minneapolis
- June 15-17 **Hypnosis.** U.C.L.A., Los Angeles
- June 15-18 **American Proctologic Society.** Shelburne Hotel, Atlantic City
- June 15-19 **General Surgery.** Cook County Graduate School of Medicine, Chicago
- June 15-19 **Medical Library Association.** King Edward-Sheraton Hotel, Toronto, Canada
- June 15-19 **Special Topics in Internal Medicine (American College of Physicians).** University of Colorado Medical Center, Denver
- June 15-26 **Diagnostic X-Ray.** Cook County Graduate School of Medicine, Chicago
- June 15-26 **Fractures and Traumatic Surgery.** Cook County Graduate School of Medicine, Chicago
- June 15-26 **Office and Operative Gynecology.** Cook County Graduate School of Medicine, Chicago
- June 15-26 **Surgical Technic.** Cook County Graduate School of Medicine, Chicago
- June 16-18 **American Orthopedic Association.** Lake Placid Club, Lake Placid, New York
- June 17 **Office Urology.** U.C.L.A., Los Angeles
- June 17-19 **Advanced Technics and Application of Hypnosis.** U.C.L.A., Los Angeles
- June 17-20 **Pediatrics.** University of California, San Francisco
- June 18 **Surgical Technic Utilizing the Isolated Intestinal Segment in Urological procedures.** U.C.L.A., Los Angeles
- June 18-20 **Sixth Annual Meeting, Society of Nuclear Medicine.** Palmer House, Chicago
- June 20-23 **Annual Meeting, South Dakota State Medical Association.** Rapid City
- June 20-24 **Pacific Northwest Obstetrical and Gynecological Association.** Banff Springs Hotel, Banff, Alberta, Canada
- June 21-23 **Maine Medical Association.** The Samoset, Rockland, Maine
- June 21-23 **American Physical Therapy Association.** Hotel Leamington, Minneapolis
- June 22-23 **Management of Chronic Kidney Disease.** N.Y.U., N.Y.C.
- June 22-26 **Advanced Electrocardiography.** Cook County Graduate School of Medicine, Chicago
- June 22-26 **Blood Vessel Surgery.** Cook County Graduate School of Medicine, Chicago
- June 22-26 **Clinical Gastroenterology.** N.Y.U., N.Y.C.
- June 22-26 **Internal Medicine; Selected Topics (American College of Physicians).** University of Cincinnati College of Medicine, Cincinnati
- June 22-27 **Clinical Hematology.** University of Colorado Medical Center, Denver
- June 23-24 **Dissection of the Thorax, Abdomen and Pelvis.** U.C.L.A., Los Angeles
- June 24-25 **Management of Hypertension.** N.Y.U., N.Y.C.
- June 25-26 **Dissection of the Extremities.** U.C.L.A., Los Angeles
- June 26-28 **Intermountain Pediatric Society.** Sun Valley, Idaho
- June 27-28 **Hand Surgery.** U.C.L.A., Los Angeles
- June 28-July 23 **Seventeenth Annual Session, Summer School of Alcohol Studies of the Laboratory of Applied Biodynamics.** Yale University, New Haven
- June 29-July 3 **Irish Medical Association.** Killarney



THE 1959 SALK VACCINATION CAMPAIGN

The California Department of Public Health has conducted a survey of uninoculated citizens, and has found that the biggest reasons why they haven't been immunized against polio are fear and procrastination.

Fourteen per cent of the people interviewed doubted the safety of the vaccine. Forty-six per cent said they were too busy or couldn't be bothered. Expense, according to the survey, was a problem for 15 per cent of those earning under \$2,000 per year. Twenty-four per cent of the interviewees with children under six years of age thought their offspring were too young for the shots.

This year, polio inoculation campaigns will be directed toward these hard-to-persuade groups who have resisted previous efforts. "KO Polio" was the name given the campaign in Savannah sponsored by the Chamber of Commerce in co-operation with the Georgia Medical Society, the National Foundation and the local department of public health. From 9 a.m. to 7 p.m. on January 2, at five hospitals and two schools, 12,000 men, women and children were inoculated against polio at 50c per shot, and were given cards to remind them that they would be due back for their second shots on KO Polio Day in February. Previously, a steady stream of articles had appeared in local newspapers to publicize and popularize the event, and advertisements promoting KO Polio Day had been sponsored by Savannah banks and utilities.

REPORTED POLIO CASES BY VACCINATION STATUS
DETROIT—1958 (Through December 9)

Type of Case	Number of Inoculations						TOTAL
	0	1	2	3	4	1 OR MORE	
Paralytic	251	40	25	16	0	81	332
Nonparalytic	95	37	57	113	11	218	313
Total	346	77	82	129	11	299	645
% Paralytic	73	52	30	12	0	27	51

The program for this year's National Hospital Week, May 10-16, will emphasize the theme of "More Roads to Recovery." An explanation of these "roads"—better care, improved technics and skills, greater numbers of personnel to apply the dramatic successes of medical science—will help offset a growing myth that hospital costs are greater than the services received.

Through the use of public forums, tours of hospital facilities, talks to community groups, and radio, television and newspaper facilities, the story of the unprecedented hospital services now available—resulting in shorter hospital stays, employment of all the medical advances, and healthier longer lives—can be told convincingly.

Each physician has a role and a responsibility in the winning of public support for the hospital in which he practices, and indeed, National Hospital Week provides an excellent opportunity for him to help create greater public appreciation for the entire medical team.



A SCHOOL FOR CYTOTECHNOLOGISTS

Currently, there are six students in Dr. F. C. Coleman's cytoscreeners' training program in Des Moines, the first such undertaking in Iowa. They are Mr. William Adamson, of Oskaloosa; Mr. Darwin Baker, of Fonda; Mrs. Dorothy Beard, of 1455 Lincoln Place Drive, Des Moines; Mrs. Jean Hubbard, of Eldora; Miss Leonora Stevens, of Cedar Rapids; and Miss Catherine Barton, of Indianola. The course is being conducted at the Mercy Hospital School of Medical Technology and Drake University, and is being financed by the Iowa Division of the American Cancer Society.

Cytotechnologists prepare slides from Papanicolaou smears and pick out the ones that may contain abnormal cells. A pathologist then examines the ones that they have referred to him.

A "Pap smear" taken in the course of a routine physical examination, it has been demonstrated, will reveal incipient uterine cancer from four to 12 years before any outward symptoms appear, and if the cancer is discovered in the early stage, the Cancer Society says, a virtually 100 per cent cure rate can be achieved. At present, uterine cancer strikes 29,000 American women each year, and kills 16,000.

The Papanicolaou technic is called exfoliative cytology because it is the study of cells that have been cast off by the body. The abnormality of the cells is not sufficiently clear cut to justify a final

diagnosis of cancer, but it constitutes grounds for suspecting it. Pilot cytoscreening programs have been conducted in Des Moines and in Iowa City during the past year, and the project is about to be made state-wide.

The six students in the course pay no tuition and have undertaken no formal obligation to the Cancer Society, though each has agreed to take a job in an Iowa hospital or clinic. The demand for such people is extremely strong throughout the country, and a total of 14 jobs had already been offered to the six, when they hadn't yet completed the first half of their brief course. Leland Johnson, Ph.D., head of the Biology Department at Drake, says it is estimated that the demand for such people in the next five years will exceed supply by 20,000, nationally.

Dr. Coleman isn't sure that the cytotechnology training program will be continued after these students graduate. "It will depend upon the demand for them in Iowa," he says.

PROBABLE COSTS OF THE FORAND PROPOSAL

Complying with a request made about a year ago by the Ways and Means Committee of the House of Representatives, the Department of Health, Education and Welfare issued a report in mid-April on the probable costs of various forms of federally-subsidized hospital-care insurance for the aged. As had been expected, the Department thinks the Forand scheme would be even more expensive than Mr. Forand himself anticipates, and believes that any alternative federal program would likewise be a heavy drain on the U. S. Treasury.

The Department avoided taking a formal stand regarding any of the schemes, but stressed the growth of private insurance in recent years and implied that voluntary agencies should be given some more time in which to broaden their coverages for elderly people.

When the report appeared, Mr. Forand claimed that it confirmed his contention that federal action is needed, and Mr. George Meany, president of the AFL-CIO, promptly agreed with him. Mr. Forand said he will once more ask the Ways and Means Committee to schedule hearings on his bill, but since Mr. Wilbur D. Mills, its chairman, is opposed, such hearings aren't likely until next year, when Congress considers its usual election-year liberalizations of the Social Security benefits.

The present terms of the Forand Bill call for (1) an increase from \$4,800 to \$6,000 in the annual wage subject to Social Security tax; (2) an increase of $\frac{1}{4}$ per cent in the tax to be paid on that increased amount, by both employee and employer; and (3) an increase of 3 per cent in the Social Security tax rate for the self-employed. Contrastingly, the report submitted by the Department of Health, Education and Welfare estimates that the Forand measure would require an increase

of $\frac{1}{2}$ per cent immediately, presumably on the larger tax base, and predicts that the expense of the program would increase over the years.

Under the provisions of the Forand Bill, persons eligible for social security benefits would be provided up to 60 days' hospital care, the costs of nursing-home care up to 120 days, less their hospital stay, and the costs of certain surgical services.

The HEW report considered the possibility of stimulating voluntary health insurance for the aged through some federally-approved pooling of risks or through federal reinsurance of private companies against abnormal losses. But—as the Eisenhower administration failed to do a few years ago—the Department conceded that such ideas would not in themselves improve the ability of low-income persons to purchase health insurance. Likewise, it was unwilling to endorse federal subsidies to help such people pay their private health-insurance premiums.

Direct government payments to private companies to help pay the premiums of above-average risks in hospital insurance for elderly people, the Department estimated would cost between \$350,000,000 and \$520,000,000 per year, assuming a \$44 per person subsidy and the inclusion of between one half and three-fourths of the people over age 65. An extra-large subsidy for low-income persons would cost between \$390,000,000 and \$520,000,000, depending on the number of persons covered. Direct federal grants for medical care of elderly indigents, the Department said would cost from \$200,000,000 to \$750,000,000 annually, and direct federal grants for nursing home care would require between \$320,000,000 and \$520,000,000 per year.

In transmitting the report to the Ways and Means Committee, Mr. Arthur S. Flemming, Secretary of Health, Education and Welfare, said, "We have attempted to present the most important factual information bearing on this subject in the most objective possible manner [attempting not] to present conclusions and recommendations."

MEDICAL CARE COSTS

According to a Tax Foundation study, a fairly typical working man of today who earns \$4,500 per year probably spends one-twentieth of his working hours—24 minutes out of each eight-hour working day—earning money to pay for medical care. And medical care includes, of course, far more than just the services of doctors of medicine.

In contrast, he works 42 minutes out of every working day to pay for his car and other transportation expense; 85 minutes to pay for housing; and 95 minutes to pay for food. But the largest single expense he must meet nowadays is his taxes. He spends 149 minutes every day earning money to pay them.

It surely is pathetic to think that he might some day work 185, 190 or even more minutes a day for the government in return for the "privilege" of receiving "free" medical care!

Facts About the New Blue Shield Programs

THE TWO new Blue Shield programs—the “Senior 65” and the Middle Income Contract—are the answer of Iowa physicians to: (1) a steadily growing social and economic need of important segments of the Iowa population for adequate health care financing, (2) Blue Shield’s need to bring its contracts up to date and more fully encompass the Iowa population, and (3) the urgent national demand for widespread medical care financing, a demand which will be met by government if it is not first met by voluntary means.

Because time is of the essence in all three of these areas, the ISMS House of Delegates, on February 22, 1959, instructed Blue Shield to implement the two programs immediately.

The new programs are positive proof that doctors desire to assist the public in meeting their medical needs through a voluntary system. The programs are as financially sound and as professionally acceptable as they can be made, for a beginning. The Iowa State Medical Society has the full assurance of Blue Shield that inequities in fees, rates, coverages, eligibility, mechanical details, etc. will be corrected when necessary and feasible.

Here are frank and accurate answers to some of the questions that have been asked most frequently about these plans.

TEN QUESTIONS ON THE “SENIOR 65” PROGRAM

1. Why full service? The answer to this question lies in the growing demand from more and more of the public that their medical care costs be budgeted and prepaid, and in the willingness of doctors nation-wide to help meet that demand. Because the average income of the over-65 Iowan is about \$1,600, it would be a hollow gesture to offer other than full-service benefits to those senior citizens who fall in low income brackets and have no reserves (net worth).

2. Who will be eligible for full service? Any individual 65 or over will be eligible if his annual income is \$2,000 or below, and his net worth is \$20,000 or below. Any couple, both 65 or over, with an annual income of \$3,000 or below and a net worth of \$30,000 or below will be eligible.

3. How many Iowans will be eligible for full service? Of the 300,000 people in Iowa who are 65 and over, a total of 166,000 are either already Blue Shield subscribers, holders of commercial policies, on the public assistance rolls, have the means to pay without insurance, or have incomes

or net worths beyond the full-service maximum. Thus, the widest possible number of eligibles would be 134,000. Based on the fact that Blue Shield has never sold contracts to more than 20 or 25 per cent of eligibles, *it is estimated that potential members of this group eligible for full service would approximate 34,000 people out of a total population of 2,600,000.*

4. How does the doctor know whether or not a patient is eligible for full service? *It is the responsibility of the patient to establish his eligibility to the satisfaction of the physician.*

5. How does the doctor handle the Blue Shield member who is not eligible for full service? As with previously existing contracts, the patient will be billed by the physician for that part of his charge not covered by the Blue Shield contract. *If the family income or net worth precludes full-service eligibility, the doctor should make his regular charge and bill the patient for the difference.*

6. What will be the fee schedule for full-service eligibles? Fees will be figured at basic cost of performing the service, construed to be 40 per cent of customary charges in all fields of practice except radiology and pathology, where overhead cost is generally 60 per cent of charges. These percentages are to be applied to the IOWA UNIT FEE INDEX (“gray book”) at a customary unit value of \$5.00.

7. Is this fee schedule permanent? No, it is not. This is a pilot program in which changes are anticipated and contemplated as experience is gained. Blue Shield and the Iowa State Medical

Participation in Blue Shield requires certain responsibilities of its members. (1) They must keep informed. (2) They must actively search out informed and dedicated persons to direct Blue Shield affairs. (3) They must learn not to use Blue Shield as a buffer between disagreeing segments of the medical profession. (4) They must come to realize that Blue Shield is regulated by insurance laws and principles. (5) They must rededicate themselves to the service principle on which Blue Shield was founded. (6) They must believe in Blue Shield and make the weight of their ideals and their morality felt in determining its aims.

Society will review all available data, including the physicians' costs, and attempt to resolve the inequities which develop.

8. Is this fee schedule a possible pattern for a federal fee schedule if the Forand Bill or similar legislation is enacted? There is no evidence, historical or otherwise, to support this fear. In every instance—maternity care during World War II, VA schedules and Medicare schedules—when a federal fee schedule has been developed, it has been negotiated in accordance with the governing law, *on customary charges for that service at that place.*

9. Why the net worth limitation? *The net worth limitation is an added protection for the doctor, in dealing with retired patients who have assets adequate to pay usual fees, but little or no income.*

10. What are the exclusions and exceptions in the contract? There are others, but *the most important exclusion is non-surgical care in home or office.* The most important exceptions to full service are: (a) when income or net worth exceeds limits; (b) when the patient has dual insurance coverage; (c) when the patient insists on a private room; and (d) when the patient fails to notify the doctor of his Blue Shield membership.

TEN QUESTIONS ON THE NEW MIDDLE INCOME CONTRACT

1. Why full service? The answer to this question lies in the growing demand by more and more of the public that as much as possible of their medical care costs be budgeted and prepaid; and in the willingness of doctors nation-wide to help meet that demand. When Blue Shield was originated in Iowa, the \$2,500 maximum income for full service covered 70 per cent of the population. Even with successive raises in this maximum, the new \$5,400 maximum will cover only 46 per cent of the population.

2. Who will be eligible for full service? *Single persons* will be eligible if their incomes are not above \$3,600 and their net worths not over \$36,000. *Couples* will be eligible if their incomes total no more than \$4,500 and their net worths no more than \$45,000. *Families* will be eligible if their incomes are not above \$5,400 and their net worths not over \$54,000.

3. How many Iowans will be eligible for full service? Reliable statistics show that 46 per cent of the population of Iowa fall in the \$5,400-or-below income range. However, this 46 per cent includes individuals covered by other Blue Shield programs, commercial insurance, etc. *It is estimated that the potential market for this contract*

would be no more than 10 per cent of Iowa's population.

4. How does the doctor know whether or not a patient is eligible for full service? *It is the responsibility of the patient to establish his eligibility to the satisfaction of the physician.*

5. How does the doctor handle the Blue Shield member who is not eligible for full service? As with previously existing contracts, the patient will be billed by the physician for that part of his charge not covered by the Blue Shield contract. *If the family income or net worth precludes full-service, eligibility, the doctor should make his regular charge and bill the patient for the difference.*

6. What will be the fee schedule for full-service eligibles? Fees will be based on the IOWA UNIT FEE INDEX ("gray book"), approved April, 1958, at \$4.00 per unit for regular services and \$5.00 per unit for radiology and pathology. The IOWA UNIT FEE INDEX ("gray book") incorporates corrections of inequities in many services and substantial increases in others, as compared to previous fee schedules.

7. Is this fee schedule permanent? No, it is not. This is a new program in which changes are anticipated and contemplated as experience is gained. Blue Shield and the Iowa State Medical Society will study all available data, including the cost-of-living index, and will attempt to resolve inequities which develop.

8. Is this fee schedule a possible pattern for a federal fee schedule if the Forand Bill or similar legislation is enacted? There is no evidence, historical or otherwise, to support this fear. In every instance—maternity care during World War II, VA schedules and Medicare schedules—when a federal fee schedule has been developed, it has been negotiated in accordance with the governing law, *on customary charges for that service at that place.*

9. Why the net worth limitation? *The net worth limitation is an added protection for the doctor, in situations where the patient has assets adequate to pay the doctor's customary charge.*

10. What are the exclusions and exceptions in the contract? There are others, but the most important exclusion is non-surgical care in home or office. The most important exceptions to full service are: (a) when income or net worth exceeds limits; (b) when the patient has dual insurance coverage; (c) when the patient insists on a private room; and (d) when the patient fails to notify the doctor of his Blue Shield membership.

THE JOURNAL *Book Shelf*



BOOKS RECEIVED

NOW OR NEVER, THE PROMISE OF THE MIDDLE YEARS, by *Smiley Blanton*, M.D. (New York, Prentice-Hall, Inc., 1959. \$4.95).

THERAPEUTIC RADIOLOGY, by *William T. Moss*, M.D. (St. Louis, C. V. Mosby Company, 1959. \$12.50).

NEUROSURGERY IN WORLD WAR II (MEDICAL DEPARTMENT, UNITED STATES ARMY), by *Major S. B. Hays*, (Washington, D. C., U. S. Government Printing Office, 1958. \$5.00).

A DOCTOR DISCUSSING MENOPAUSE, by *G. Lomard Kelly*, M.D. (Chicago, The Budlong Press, 1959. \$1.50).

SURGICAL PATHOLOGY, SECOND EDITION, by *Lauren V. Ackerman*, M.D., and *Harvey R. Butcher, Jr.*, M.D. (St. Louis, C. V. Mosby Company, 1959. \$15.00).

DISEASES OF METABOLISM: DETAILED METHODS OF DIAGNOSIS AND TREATMENT, FOURTH EDITION, by *Garfield G. Duncan*, M.D. (Philadelphia, W. B. Saunders Company, 1959. \$18.50).

SPONTANEOUS ABORTION, ed. by *David N. Danforth*, M.D., and MENSTRUAL DISORDERS, ed. by *C. Frederic Fluhmann*, M.D. Vol. II, No. 1 of CLINICAL OBSTETRICS AND GYNECOLOGY, A QUARTERLY BOOK SERIES. (New York, Hoeber-Harper Co., 1959. \$18 per year for four consecutive numbers).

BOOK REVIEWS

ANTIBIOTICS MONOGRAPHS No. 8: CHLOROMYCETIN (CHLORAMPHENOCOL), by *T. E. Woodward*, M.D., and *Charles L. Wisseman, Jr.*, M.D., and edited by *Henry Welch*, Ph.D., and *Felix Marti-Ibanez*, M.D. (New York, Medical Encyclopedia, Inc., 1958. \$4.00).

ANTIBIOTICS MONOGRAPHS No. 9: PENICILLIN, by *Harold L. Hirsh*, M.D., and *Lawrence E. Putman*, M.D., edited by *Henry Welch*, Ph.D., and *Felix Marti-Ibanez*, M.D. (New York, Medical Encyclopedia, Inc., 1958. \$4.00).

ANTIBIOTICS MONOGRAPHS No. 10: STREPTOMYCIN AND DIHYDROSTREPTOMYCIN, by *Louis Weinstein*, Ph.D., M.D., and *N. Joel Ehrenkranz*, M.D., edited by *Henry Welch*, Ph.D., and *Felix Marti-Ibanez*, M.D. (New York, Medical Encyclopedia, Inc., 1958. \$4.00).

These three monographs, parts of a series, have been published under the editorial direction of Henry Welch and Felix Marti-Ibanez. They are rather brief abstracts of current opinions with regard to the antibiotics in question. Each book is 100-150 pages long, and is well-documented with long bibliographies. But each, admittedly, no more than skims the surface of the literature on its subject. Each has been written by a well-known authority with wide experience. There are a few general chapters on such aspects as history, chemistry, resistance and pharmacologic properties, and then each goes on to deal with the uses of the antibiotic in the treatment of specific diseases.

All of the monographs are attempts to help the

practitioner find his way through the muddled and voluminous literature. They succeed admirably. They present what they have to say briefly and clearly. Doses, indications, contraindications and futilities are dealt with in a manner that the reader welcomes. All of us who use the bewildering array of antibiotics should be glad to have these little books.—*Daniel A. Glomset*, M.D.

PEDIATRIC METHODS AND STANDARDS (DEPARTMENT OF PEDIATRICS, SCHOOL OF MEDICINE, UNIVERSITY OF PENNSYLVANIA), THIRD EDITION, ed. by *Fred H. Harvie*, M.D. (Philadelphia, Lea & Febiger, 1958. \$4.50).

An amazing amount of information is contained on the 325 pages of this spiral-bound pocket-size manual. Originally prepared as a handbook for medical students, it has now appeared in three editions within just seven years. Rather than providing a synopsis of pediatrics, it furnishes a wealth of factual data and test methods, together with brief descriptions of diagnostic and therapeutic measures. The value of the material is further enhanced by numerous parenthetical source references which enable the physician to obtain further data without a great deal of searching.

This book contains such data as organ weights at various ages, the composition of various foods, brief descriptions of many laboratory procedures, considerations of fluid and electrolyte balance, descriptions of many drugs, therapy for poisoning cases, and many other sorts of methods and standards. Though some of the interpretations may be somewhat controversial, this handbook is nevertheless a noteworthy publication. It should serve as a very useful quick-reference manual in or out of the hospital or office.—*M. E. Alberts*, M.D.

CALLANDER'S SURGICAL ANATOMY, FOURTH EDITION, by *Barry J. Anson*, M.A., Ph.D. (Med. Sci.), and *Walter G. Maddock*, M.D. (Philadelphia, W. B. Saunders Company, 1958).

To those of us who have known and have used the third edition of this excellent work on anatomy and its surgical considerations, this new edition is indeed welcome.

The revision of the work has not disturbed its basic format. The anatomical facts are presented clearly and concisely. The surgical problems related to these facts are thoroughly discussed, not only from the viewpoint of their rationale, but also from the viewpoint of their relation to the technical performance of the surgical procedure itself.

All advances in the field of surgery since the publication of the previous edition are presented and

dealt with in the same manner as were the contents of the previous edition. In essence, the work has been revised and brought up to date—a procedure that should be followed with regard to other such medical references.

Each student and practitioner of surgery should welcome this addition to his bookshelf.—*James M. Head, M.D.*

PRACTICAL LEADS TO PUZZLING DIAGNOSES, by *Walter C. Alvarez, M.D.* (Philadelphia, J. B. Lippincott Company, 1958. \$9.00).

This book contains very lucid descriptions of various psychoneurotic, psychosomatic and psychotic conditions that occur in the relatives of patients with more obvious pathologies. Frequently, they present diagnostic problems of major importance. Dr. Alvarez points out that they frequently occur in the relatives of patients with psychoses, alcoholism and epilepsy, and his discussions are replete with case presentations.

The incidences of some of the psychoneurotic symptoms in relatives of patients with alcoholism, epilepsy, etc. are so slight as to lack statistical significance, but emotional depressions, marked nervousness, phobias and exhaustion states occur so frequently in the relatives of psychotics and alcoholics that the association cannot be ignored.

Perhaps the most valuable chapter in the book is the one on the art of handling nervous persons. There is a great deal of wisdom in those pages.

Dr. Alvarez is frank to admit that many of the associations are infrequent and haven't been studied systematically. More statistical work is needed in this field.—*Charles H. Gutenkauf, M.D.*

INSURANCE SUPPLEMENT FOR MEDICARE

A special Blue Cross-Blue Shield group insurance plan has been designed to prepay costs not covered by Medicare for the dependents of servicemen stationed in Iowa. In announcing the scheme, Col. Homer E. Miller, Iowa sector commander for the 14th Army Corps (reserve), pointed out that no service-operated hospitals are available in Iowa for the 400 servicemen and their families currently on active duty in the state.

The members of servicemen's families at present are ineligible for Medicare-financed treatment in private hospitals, except in emergencies. Dr. Earl C. Lowry, medical director of Iowa Blue Shield, said the new program is the normal group insurance plan for families, except that it does not include the husband.

Participation is to be voluntary, and premiums will be paid by the individuals covered, rather than by the government. The eligibles, at present, include the dependents of Air Force, Army, Navy and Marine Corps recruiters, reserve and National Guard advisory personnel, ROTC instructors and advisors, and others serving actively with one of the services.

The program was explained on April 8 to the major military commanders in the state, during a meeting at Fort Des Moines.

ORINASE-INSULIN THERAPY

Certain maturity-onset diabetics appear to respond more favorably to a combination of insulin and the oral hypoglycemic drug Orinase (Upjohn), than to either used alone, according to researchers at the Isaac Albert Research Institute of the Jewish Chronic Disease Hospital, in Brooklyn.* Reporting in the *AMERICAN JOURNAL OF MEDICAL SCIENCE*, Drs. B. W. Volk and S. S. Lazarus have suggested that the "problem diabetic" requiring comparatively large doses of insulin be placed on a trial course of combined Orinase-insulin therapy.

"The lack of hypoglycemic reactions," they noted, "suggest that this might be the therapy of choice in patients with complicating arteriosclerotic cardiovascular disease who might react badly to the wide swing in blood sugar frequently seen with large insulin dosages." Results of their study indicated that Orinase permits the maximum release of the patient's own endogenous insulin, despite the presence of exogenous insulin.

Their trials included 12 selected insulin-dependent diabetics varying in age from 52 to 75. Up to the time of the combined therapy study, they had been poorly controlled, as indicated by fasting blood sugar tests, although insulin dosages ranged from 30 to 50 units. The patients had been diabetics for periods ranging from nine to 34 years, and showed severe complications of the disease.

Following a two-week control period, the insulin dosage of each patient was reduced 30 per cent, and 0.5 Gm. of Orinase was given twice daily. After several weeks, the insulin dosage was further reduced, and eventually it was eliminated. Meanwhile, a daily 1.0 Gm. dose of Orinase was continued for several weeks. Then all medication was withdrawn for one week, after which the 1.0 Gm. dose of Orinase was restored. As needed, small doses of insulin were again added to the Orinase, and increased gradually until optimum control in each patient was obtained.

Drs. Volk and Lazarus found that the response of some patients to Orinase was at times superior to their response to insulin. They said, however, that long-term blood sugar studies prompted them to conclude that certain diabetics respond better to combined Orinase-insulin therapy than to either drug alone.

* Volk, B. W., and Lazarus, S. S.: Significance of effectiveness of combined insulin-Orinase treatment in maturity-onset diabetes. *AM. J. M. SC.*, 237:1-7, (Jan.) 1959.

Attend the Annual Meeting of the
AMERICAN MEDICAL ASSOCIATION
Atlantic City, June 8-12

THE DOCTOR'S BUSINESS

Tax Report

HOWARD D. BAKER

WATERLOO



Life insurance companies face the threat of losing their favored tax position. In a new bill passed by the U. S. House of Representatives and to be acted upon promptly by the Senate, the investment and underwriting income of life insurance companies would be made fully taxable. Currently, the life insurance companies' "investment income" receives partial tax exemption, and in consequence those firms enjoy a very substantial tax advantage. Obviously, the loss of this tax advantage will have its effect upon the profits of these companies, and the shares of many of them will suffer a serious loss of investment appeal if this change materializes.

PROPOSED TAX ON PREMIUM-LOAN INTEREST

"Premium loan" life insurance plans also face a serious threat as the Treasury Department ponders a new attack to halt the tax-financed purchase of policies. For some time, the Bureau of Internal Revenue has sought a law change to put a stop to the systematic deduction of interest on loans to pay life insurance premiums.

Having been frustrated in the legislature, government officials now look to two recent court decisions for a way to stop this deduction. Both decisions disallow interest on loans that were used to buy annuities prior to 1954, the year in which a law was passed making interest on single-premium plans non-deductible. The Bureau now wonders whether court action might not similarly nullify interest deductions on policy loans to purchase insurance with premiums payable over a period longer than the specified four years.

In annuity cases, the Tax Court held that the loans were merely a subterfuge designed solely for tax benefit. Insurance men believe, however, that the argument is invalid as regards life insurance policies which provide immediate protection rather than the deferred benefits provided by annuities. Needless to say, insurance men and policyholders will be watching this issue with interest over the coming months. An adverse decision or ruling would practically spell death for this type of insurance, to say nothing of the serious

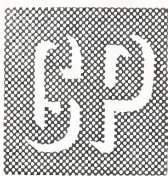
effect it would have upon the insurance plans of thousands of policyholders who are insured heavily under this type of contract.

Tax rate increases or decreases in 1959 are held, by most legislative leaders, to be very improbable. There seems to be little support for the President's requested gas tax increase, but corporate tax rates and certain excise tax rates due to expire July 1, 1959, will probably be extended. Legislative action this year will probably prevent increases, rather than accomplish deductions. Since tax reductions now appear to be quite remote, we can expect continued pressure for major tax-law revisions and further loophole-closing provisions.

CANADIAN SUCCESSION TAX

Effective January 1, 1959, the Dominion of Canada adopted a new estate tax law. Under this statute, a shareholder living in the United States will be subject to the estate tax if the value of his Canadian holdings exceeds \$5,000. The tax rate rises sharply to 15 per cent on total holdings of amounts up to \$5,882, and thereafter remains at 15 per cent. To the extent that the Canadian tax attributable to the shares does not exceed the United States tax attributable to them, a United States shareholder who is subject to the United States estate tax may normally claim the Canadian tax as a credit against the United States one. This means that a shareholder who is not liable for any United States estate tax would suffer a loss to the extent of the tax due to the Dominion of Canada. Such a shareholder, then, would profit from limiting his Canadian holdings to less than \$5,000. However, if the United States citizen is subject to his own country's estate tax, no loss would result, since United States estate tax rates are generally higher than those levied by the Dominion of Canada.

In considering this factor, one should remember that this is a once-in-a-lifetime tax that doesn't pose any particular administrative problem in settling an estate. The gross value of your estate will dictate whether or not your Canadian holdings should be limited to \$5,000.



Iowa Academy of General Practice

PLAN, AND CARRY OUT YOUR PLAN

No physician ever completes his medical education, and any of us who ever gets the notion that he has done so is only fooling himself. Scientific progress is constantly being made to help us diagnose and treat our patients' ills more promptly, accurately and effectively. Thus, we owe it to our patients to take every opportunity to supplement our medical knowledge. Our patients approve our getting away from our offices for this purpose, since they know that by this means we can take better care of their illnesses.

There are various methods by which we can improve our medical knowledge and skill. We can read what has been published in journals and books about the phases of medicine in which we are interested. Yet, the demands that our patients make upon our time usually prevent our concentrating on such material. In the evenings when we might be expected to have time for such work, telephone calls from patients are sure to interrupt us. Therefore, the busy practitioner accomplishes most by attending out-of-town postgraduate courses or conferences.

One of the principal objectives of the Academy of General Practice is to encourage each of its members to become a better practitioner. Thus, it requires that each member submit evidence of having attended 150 hours of postgraduate courses before he is reelected to another three-year term of membership. Fifty of these hours must be in Category I courses, and AAGP members are aware of the difference between Category I and Category II study credits. In singling out certain courses for Category I credit, the Academy does not mean to imply that those are the only ones that have merit. Many courses or conferences that entitle members to Category II credit are of the highest value to the physician, and the considerations that prevent their classification as Category I are only technical.

Just as important as our efforts at improving our knowledge of medicine are our planned vacations away from all phases of medicine. It is certainly true that "all work and no play make Jack a dull boy." We physicians are seeing an ever-increasing number of patients whose illnesses have been produced by the increasing stress and strain

of their work. We should give ourselves the same advice that we give those individuals, and what is more, we should take that advice!

When our patients note the effects of the strain to which we are subjected, they remark, "Doc sure is getting grumpy." Thus, we should plan to take at least one vacation each year to get away from the tension of a busy practice.

Our taking occasional vacations will benefit some people other than our patients and ourselves. The busy doctor can't be the sort of husband and father he'd like to be unless he gets away from his work periodically. It is only then that he can be sure of spending some time with his wife and children.

Who is the silent partner in your practice? Who answers the phone at your house? Who allays the anxiety and apprehension of excited patients when you are neither at home or at your office? Who relieves you of responsibility for many of the home-management problems that other men solve? The answers to these questions are obvious. Your wife may not technically be "gainfully employed," but she nevertheless has a steady and exhausting job. Plan a vacation where she can relax and enjoy herself. If she does, you will too. Don't take her fishing, if she doesn't like to fish. Don't take her to the mountains, if she doesn't like to climb. Do something together, whatever it may be, just so that your silent partner can relax and enjoy herself, and you will too.

After such a vacation, you will return to your practice and enjoy it. You will have exchanged your "grumpy" mood for a cheerful one. All physicians should make plans ahead, rather than just practicing from one day to the next. Plan to improve your medical knowledge; plan to take a relaxing, enjoyable vacation; and then carry out those plans.

LEDERLE SYMPOSIUM

Remember to attend the Lederle Laboratories—IAGP Symposium, at the Hotel Fort Des Moines, in Des Moines on May 13. The tentative program was published in the IAGP section of the April JOURNAL.

STATE DEPARTMENT OF HEALTH

Edmund G. Zimmerman
COMMISSIONER

TUBERCULOSIS REPORT FOR 1957-1958

1957—Newly reported cases	384
1958—Newly reported cases	539
Increase 155 for 1958	
1958—Youngest reported case	8 months—TB Meningitis
1959—Youngest reported case	4 months—Pulmonary TB Active-Positive Sputum

* * *

Report for patients who were discharged or went AWOL prior to January 1, 1957, and were readmitted to the Sanatoria in 1957 and 1958:

	Male	Female	Total	Condition on Relapse		
				MIN.	MOD. ADV.	FAR ADV.
1957	69	26	95	3	21	71
1958	93	30	123	1	24	98
Total	162	56	218	4	45	169

Time interval for both years between discharge and readmission: 1 year to 23 years. In the two years, 18 expired after readmission.

* * *

RESULT OF FOLLOW-UP ON POSSIBLE MALIGNANCIES January 1, 1958-December 15, 1958

14 x 17 Films	Num- ber	Under Obsv.	Sur- gery	Other Findings	Nega- tive	Healed or Benign	Failed*
Coin lesion	31	7	—	4	—	8	12
Mediastinal mass	26	10	—	8	1	2	5
Neoplasm	12	4	—	1	2	2	3
Cancer— lung	2	—	2	—	—	—	—
Other	1	—	1	—	—	—	—
Total	72	21	3	13	3	12	20

* Physicians' replies indicate many patients were too advanced in years to undergo surgery; some had moved to other localities; others were not interested in follow-through.

* * *

The public health nursing case load has increased for 1957 and 1958 because of:

1957 newly reported cases 384 and readmission of relapse cases 95	Total	479
1958 newly reported cases 539 and readmission of relapse cases 123	Total	662
Total cases for the above two years requiring public health nursing and physician supervision		1,141

BLACKMAIL

A shake-down racket in which Kansas doctors were victimized about 14 months ago has been attempted recently in northern Missouri. A woman makes an appointment with a physician, usually in a town of more than 10,000 population, and when she sees the doctor she tells him she is pregnant and requests an abortion. When the doctor refuses, she persuades him to prescribe some mild tranquilizing drug to induce restfulness.

A week or two later, one or the other of two different men visits the doctor and claims to be the woman's husband. He asserts that they have been married for quite a long period and have tried unsuccessfully to have a child. Then he declares that the doctor's prescription has been responsible for the woman's having a miscarriage and threatens to expose him as an abortionist. In some instances, physicians are said to have paid as high as \$6,000 for his silence.

The individuals engaging in this operation are believed to be Melvin Lawrence Meinsen, a white man 5 ft. 8 in. tall and 31 years of age, with hazel eyes, grey-brown hair and medium complexion, weighing 160 lbs.; James Clark Yeager, a white man 5 ft. 7½ in. tall and 37 years of age, with brown hair and eyes and medium build, weighing 169 lbs.; and Barbara Joan Atchley, alias Bonnie Lou Bacon and Bonnie Lou Holbrook, a white woman 5 ft. 5 in. tall and 27 years of age, with brown hair and eyes, weighing 111 lbs. "Mug shots" of each of them can be seen at the JOURNAL office.

HAD A CHECK-UP LATELY?

As it had done in each of two or three preceding years, the American Academy of General Practice offered physical examinations to those of its members who attended its annual scientific session in San Francisco last month. Of the first 350 doctors who accepted the proffered service, serious symptoms were discovered in 21. There were four cases of glaucoma, one rectal cancer, three enlarged livers, one abdominal mass, 10 suspicious chest x-rays suggestive of diseases other than tuberculosis, and two urgently suspicious chest x-rays calling for prompt diagnostic checking.

DEVILED EGGS CAUSED CHILDREN'S ILLNESS

In a report issued on March 31, Dr. Ralph H. Heeren said an investigation had revealed that the illnesses of school children at Van Wert on March 13 had been caused by hemolytic staphylococci in deviled eggs which had been served them for lunch at the school. The toxin, he said, developed because of a lack of refrigeration after the eggs were prepared.

"Foods such as deviled eggs, cream puffs, potato salad and ham loaf should be kept refrigerated between the time they are prepared and the time they are eaten," Dr. Heeren said.

About 60 youngsters experienced violent vomiting, diarrhea and leg pains, and a few of them lost consciousness briefly. About 50 of them were treated at the Decatur County Hospital, in Leon, and the remainder at the Clarke County Hospital, in Osceola. Most of the children spent the night in the hospitals.

CHANGES IN MAILING RATES

Effective May 1, 1959, the minimum postal rates on specimens sent to the State Hygienic Laboratory will be as follows:

(1) Syphilis serology containers ... 6c

(2) Agglutination test containers .. 6c

(3) Diphtheria containers 7½c

(4) Tuberculosis containers 9c

(5) Stool (typhoid) containers 9c

(6) Stool (parasites and ova) containers 9c

(7) Envelope mailer (slide) containers 3c

Please see that adequate postage is applied, so as to avoid the return of the container to the sender for postage due.

See Postal Manual Excerpts, January, 1959, Domestic Postage Rates and Fees.

MORBIDITY REPORT FOR MONTH OF MARCH, 1959

Disease	1959 Mar.	1959 Feb.	1958 Mar.	Most cases reported from these counties
Diphtheria	0	1	0	
Scarlet fever	516	542	376	Allamakee, Johnson, Polk
Typhoid fever	0	0	0	
Smallpox	0	0	0	
Measles	2,653	2,714	671	Dubuque, Guthrie, Polk, Scott
Whooping cough	15	17	8	Cerro Gordo, Johnson, Pottawattamie, Scott
Brucellosis	16	12	9	Iowa
Chickenpox	903	691	1,197	Des Moines, Dubuque, Polk, Pottawattamie
Meningococcic meningitis	1	3	1	Clarke
Mumps	312	296	1,146	Linn, Polk, Scott
Poliomyelitis	0	0	0	
Infectious hepatitis	12	16	24	Dubuque
Rabies in animals	13	14	32	Benton
Malaria	0	0	0	
Psittacosis	0	0	0	
Q fever	0	0	0	
Tuberculosis	39	22	52	For the state
Syphilis	73	78	129	For the state
Gonorrhea	58	78	74	For the state
Histoplasmosis	0	0	0	
Food intoxication	68	0	0	Decatur
Meningitis (type unspecified)	0	1	0	
Diphtheria carrier	0	1	0	
Aseptic meningitis	0	1	0	
Salmonellosis	4	2	9	Cerro Gordo, Linn
Tetanus	0	0	0	
Chancroid	0	0	0	
Encephalitis (type unspecified)	1	2	1	Pottawattamie
H. influenzal meningitis	0	0	3	
Amebiasis	0	2	1	
Shigellosis	6	4	1	Polk
Influenza	788	141	107	Story

POLIOMYELITIS CASE SUMMARY, IOWA 1958

Copies of the following 1958 Iowa poliomyelitis case summary have been sent to every Iowa physician who has reported a case of poliomyelitis, paralytic or non-paralytic, to the Iowa State Department of Health. Doctors have been able from it

to identify their own patients. It is one way the State Department of Health is able to show its appreciation to the Iowa physicians who have been so cooperative in helping us with our poliomyelitis surveillance program.

County	Patient's Initials	Age	Sex	Paralytic or Non-par.	Immunizations		Lab. Culture	POSITIVE ISOLATION
					NUMBER	MONTHS BETWEEN LAST INJECTION AND ONSET	TAKEN	
Appanoose	D.W.	4½	F	Par.*	0		No	
	L.W.	7 mo.	M	Par.	0		No	
Audubon	B.G.	16	F	Non-par.	3	12	No	
	P.J.	37	F	Par.	0		No	
Benton	C.M.	2	F	Par.	0		Yes	No
Black Hawk	P.E.	25	M	Par.	0		Yes	Polio 3
	M.M.	6	M	Par.	2	13	No	
Boone	M.S.	38	M	Par.	0		Yes	No
	J.G.	14	F	Par.	0		No	

County	Patient Initials	Age	Sex	Paralytic or Non-par.	Immunizations		Lab. Culture	
					NUMBER	MONTHS BETWEEN LAST INJECTION AND ONSET	TAKEN	POSITIVE ISOLATION
Bremer	D.L.	24	F	Non-par.	0		No	
	M.K.	28	F	Non-par.	3	10	No	
Buchanan	E.C.	16	F	Par.	0		Yes	Polio 3
	L.G.	5	F	Par.	0		No	
Butler	W.B.	20	M	Non-par.	0		No	
Cerro Gordo	J.H.	11	M	Par.	3	32	Yes	No
Cherokee	S.R.	15	F	Non-par.	3	5	Yes	No
Clay	R.P.	10	M	Non-par.	3	?	No	
	S.R.	5	F	Par.	2	14	No	
Dallas	V.K.	28	F	Par.	0		No	
Decatur	R.S.	6	M	Par.	3	18	No	
	A.B.	23	F	Non-par.	2	5	No	
Des Moines	C.B.	31	M	Non-par.	3	4	Yes	No
	R.B.	5	M	Par.	0		No	
Fayette	R.R.	17	M	Non-par.	0		No	
	R.O.	2	F	Par.	0		Yes	Polio 1
Floyd	K.E.	22	F	Non-par.	0		Yes	Polio 3
	G.H.	49	M	Non-par.	0		No	
Ida	C.M.	1	M	Par.	0		Yes	Polio 1
	R.W.	40	M	Non-par.	0		Yes	No
Jasper	G.G.	4	F	Non-par.	3	8	No	
	O.S.	22	M	Par.	0		Yes	No
Linn	R.S.	15 mo.	M	Par.	0		Yes	Polio 1
	M.B.	38	F	Non-par.	0		No	
Lyon	S.A.	9	F	Non-par.	3	?	No	
Marshall	K.A.	15	M	Par.	0		No	
	S.B.	35	F	Par.	0		Yes	Polio 3
Mills	D.J.	25	F	Par.**	2	3	No	
	L.M.	32	M	Par.	3	9	Yes	Polio 1
Muscatine	R.B.	19	M	Par.	2	7 days	No	
Page	C.W.	23	M	Non-par.	0		Yes	No
Plymouth	P.B.	34	M	Non-par.	2	6	No	
Polk	B.S.	8	M	Non-par.	4	2	No	
	D.E.	3	M	Par.	3	21	Yes	Polio 1
Sac	E.F.	31	M	Par.	3	11	Yes	Polio 3
	N.J.	8	F	Non-par.	0		No	
Story	D.M.	4 mo.	F	Par.	0		Yes	Polio 1
	P.M.	3	F	Par.	0		No	
Wapello	J.M.	7	M	Non-par.	3	19	No	
	R.M.	8	M	Par.	2	33	No	
Washington	D.M.	13	M	Non-par.	0		Yes	Polio 1
	G.R.	10	M	Non-par.	3	11	No	
Warren	J.R.	26	M	Non-par.	0		Yes	No
	J.W.	33	M	Par.	2	10	No	
Woodbury	D.H.	9	M	Non-par.	3	17	No	
	S.B.	15	F	Non-par.	3	19	No	
Wapello	D.E.	14	M	Non-par.	2	30	No	
	W.G.	23	M	Non-par.	0		No	
Washington	C.N.	15	M	Non-par.	0		No	
	D.S.	29	M	Non-par.	0		No	
Warren	R.G.	23	M	Non-par.	0		Yes	No
	R.W.	5	M	Par.	0		Yes	Polio 3
Washington	S.B.	5	M	Par.	0		Yes	Polio 1
Woodbury	L.B.	23	M	Non-par.	3	8	Yes	No
	A.Y.	2	M	Non-par.	0		Yes	Polio 1
Woodbury	S.Y.	3	M	Par.	0		Yes	Polio 1
	T.Y.	10 mo.	M	Par.	0		Yes	Polio 1
Woodbury	J.L.	3	M	Non-par.	4	1	No	
	F.M.	2	M	Non-par.	0		No	
Woodbury	A.M.	2	M	Non-par.	0		No	
	D.P.	6	M	Par.	3	19	Yes	No
Woodbury	D.S.	5	M	Non-par.	3	23	No	
	M.T.	3	M	Non-par.	0		No	
Woodbury	T.W.	14	M	Non-par.	0		No	

* This is the only Iowa person who developed poliomyelitis in 1958 who died in 1958.

** Poliomyelitis Type 1 isolated from two immune family contacts who remained well.

Additional analysis of this data will appear in subsequent issues of this JOURNAL.



Woman's Auxiliary News

OUR PRESIDENT SAYS—

Time marches on, but it seems to me that during the last 12 months time has been jet-propelled. No sooner were our plans made for the year than it was time to wrap up our efforts and evaluate the results of our work.

This is my last letter for the AUXILIARY NEWS as your president, and I should like to take this opportunity to express my appreciation for the loyalty and cooperation that you have given me all through the year. How we work together is as important as what we do. There is an art in working together harmoniously, with hearts and minds sensitive to human relationships. If we can perfect our cooperation, our record in the years ahead will be phenomenal. The Auxiliary was founded 30 years ago by just a few doctors' wives, and the organization's work is now being carried on by an ever-increasing majority of them. The record of our accomplishments is already impressive, and in the future it will be even more so.

In all that we do, there are a few basic concepts that we must remember. We are a working organization devoted to serving our communities and the medical profession. We do our best work under the direct guidance of our medical societies. We develop all of our activities in order to give motivation and a sense of participation and achievement to each individual member.

It has been an honor and a privilege to serve as your president. I shall always cherish the friendships I have made, and I shall always remember the hospitality I have enjoyed. I should like to pay tribute to each of my fellow officers, to each committee member, to each county president and to each individual member. Thank you for your many kindnesses. I should like to express my thanks to the entire office staff at the ISMS headquarters for their assistance—to Mr. Taylor for his help and guidance, to Mr. Hamilton, editor of the AUXILIARY NEWS and to Dr. Abbott for his advice and unfailing support. Words are inadequate to express my gratitude to Hazel Lammey for the many personal favors she has accorded me and for the tremendous amount of work she has done for the Auxiliary and for the Medical Society.

—MRS. H. C. MERILLAT
President

THE AMA WOMAN'S AUXILIARY CONVENTION

More than 2,500 physicians' wives will gather at Hotel Haddon Hall, in Atlantic City, June 8-12, for the thirty-sixth annual convention of the Woman's Auxiliary to the American Medical Association. National committee meetings and round table discussions will be held June 6-8, and the formal opening of the convention is slated for Tuesday morning, June 9.

Business sessions on Tuesday and Wednesday will be devoted to state and national committee reports and discussions on current projects, including civil defense, mental health, allied medical careers, automobile safety and community service. One of the highlights of Tuesday's general session will be an address on survival medicine in national defense by Lt. Col. Ingalls H. Simmons, MC, U. S. A., director of the Department of Preventive Medicine, Army Medical Service School, Fort Sam Houston, Texas. Tuesday's luncheon in honor of Auxiliary national past-presidents will feature an address by Mr. Aubrey Gates, director of the AMA Field Service Division on "Talking to Congressmen Back Home."

During Wednesday's general meetings, Mr. Frank R. Burrows, Jr., field service director of the Chicago Citizens' Traffic Safety Board, will discuss the driver's responsibility in auto safety. He has given his speech the title "You Can Get Blood Out of a Turnip."

Dr. Marvin A. Block, chairman of the AMA Committee on Alcoholism, will make a report as a part of the Auxiliary's mental health committee program.

The principal speaker at Wednesday's luncheon honoring the national Auxiliary president, Mrs. E. Arthur Underwood, of Vancouver, Washington, and the president-elect, Mrs. Frank Gastineau, of Indianapolis, Indiana, will be Dr. Gunnar Gundersen, immediate past-president of the AMA. At this session, the Woman's Auxiliary contribution to AMEF will be made, and AMEF awards will be presented to the winning Auxiliaries.

Following luncheon, two films will be shown: "Allied Medical Careers," produced by the Maricopa County (Arizona) Auxiliary, and "Crusade for Freedom." In addition, Carol Lane, of the Shell Oil Company, will give a demonstration on

traffic safety and will show a film, "Touring Can Be Child's Play." At the conclusion of this portion of the program, slides on outstanding state and local Auxiliary projects will be shown.

The election and installation of national officers will take place on Thursday morning, and Mrs. Gastineau will deliver her inaugural address. Adjournment is scheduled for noon.

The Board of Directors will meet on Thursday afternoon, and afterward there will be informal discussions of 1959-1960 programs with the national committee chairmen. A post-convention workshop for national officers, directors, committee chairmen, state presidents and presidents-elect will be held Friday morning. At that time, Dr. Ernest B. Howard, AMA assistant executive vice-president, will speak on new AMA activities.

All Auxiliary members, their guests and guests of physicians attending the AMA meeting in Atlantic City may participate in all social functions and attend the general meetings of the Auxiliary.

THE PURSUIT OF HAPPINESS

MISS HANNA NOLLEN

My decision to make a little study of the pursuit of happiness was prompted by a growing conviction that we have been living on a diet of self-indulgence, substituting pills and powders for self-discipline. I believe that this concern with the easy way misleads young people into accepting a false standard of values, and gives them little incentive to excel in anything.

In this study of the way to happiness, I began by interviewing some of the wise men of the ages. Socrates proposed that the first step is to "Know Yourself," to recognize your limitations, and then to live in harmony with your own sense of what is good. Plato recommended a life of moderation in all things, guided by reason. Aristotle devised a method called the "Golden Mean" to lead men to a wise and happy life. This meant choosing the action which is half-way between extremes. Courage, for example, is half way between cowardice and rashness; liberality is half-way between stinginess and extravagance. Thus judgment and self-control may be the true source of happiness.

The Roman Emperor, Marcus Aurelius, expressed the Stoic philosophy in the words: "Seek not to have things happen as you choose, but rather choose that they should happen as they do, and you shall live more happily." But Voltaire, the brilliant French author and philosopher, saw no virtue in such a passive life. He chose work and freedom as the requirements for a satisfying life. His familiar epigram, "I do not agree with a word you say, but I will defend to the death your right to say it," is characteristic of his attitude. Whether in prison or in the midst of gay court life, he kept

himself joyfully busy at his chosen work—ridiculing superstition and fighting despotism.

From Schopenhauer, the German pessimist, it was hard to find any suggestion about happy living. He declared that what men call happiness is nothing but the temporary absence of pain. As soon as want and suffering let a man rest, he becomes so bored that he looks for new adventures which end in pain. Happiness might be found by a great genius who could renounce his will and view life without any emotion. But this is impossible for ordinary men and women, unless they are so stupid that they do not realize that there is nothing in life worth while.

Finally I turned to someone more familiar with our way of life, John Dewey, chief of our modern philosophers of education. His theory is expressed in the statement, "We learn by doing." According to Dewey, people find happiness by doing whatever gives them the greatest feeling of achievement. Happiness might be defined as the ability to find out what one is best fitted to do, and the opportunity to do this for a suitable reward.

On comparing all these different suggestions, I found that every one of them stressed activity and effort. Not one of them recommended an idle or an easy life as a means to happiness. This discovery led me to do some pondering about the effect upon our young people of a twenty year experiment in what was called "Progressive Education." On the general theory that children must be made happy before they can learn, the school program was turned into a kind of coddling process designed to take the study out of learning. It has been a glorification of the easy way.

High school students have been advised *not* to elect mathematics, science, history, or foreign languages unless these were required for some immediate purpose, like admission to college. The explanation of this attitude is that the chief aim of public education is social adjustment, not acquiring a lot of "useless" information. The result has been that numerous practical courses have replaced the academic studies formerly required of high school graduates who planned to go to college. This has made a high school diploma hardly more than a certificate of attendance for the required length of time, and it has discouraged the abler students from devoting themselves to concentrated study.

We need a re-definition of education for happiness, unless we want to turn out a nation of mollycoddles whose chief interest in life is comfort and security. Our aim should be, as it always has been for all good teachers, to arouse in every child an eagerness to excel in his own field, and to give honor to every child who works for excellence according to his own ability. Never before have we been so urgently in need of superior training.

A world that is turning to intricate machines to do its work will demand fewer and fewer hands and more and more heads with active brains inside them. This need cannot be met by homes and

This paper was presented at a recent meeting of the Polk County Medical Auxiliary.

schools that see little value in intellectual endeavor, or by school officials who place social adjustment above high standards of achievement in the basic academic studies for the more able students.

There is a general misconception that hard work is an evil, and that leisure is the way to happiness. Heaven, the realm of perfect happiness, has been pictured for ages past as a passive life of doing nothing forever and ever. But the truth is that happiness is not a passive, but an active thing. We have the power to create a hell or a heaven for ourselves. If we cultivate our power for love and compassion and understanding, we can throw open the door to a realm about us rich in happiness and companionship. I believe that is what Jesus meant when he said, "The Kingdom of Heaven is within you." It is not to be found here, or there, or in "flowery beds of ease." It is within ourselves—a living, breathing, vibrant experience. The very belief that we can help create a Heaven upon earth is in itself an incentive to make this belief a living reality.

In all the philosophy that I have read, I have never found any way to human happiness so completely satisfying as the simple words of Jesus, "Love your neighbor as you love yourself." This is no invitation to a spineless, self-effacing life, but a challenge to gain a sense of our own potential worth so abundant that it overflows into an equal respect for the intrinsic worth of every person we encounter. Although we find this ideal beyond our possible attainment, we do get closer to happiness as we move in the direction of this goal. Happiness is an unsought treasure that falls to those who do not look for an easy way to satisfaction, but welcome a challenge to their best endeavor, to their highest capacity.

If I were asked for the best way to guide young people to the joy of living, I should reply: Turn them from the pursuit of happiness, and turn them toward the pursuit of excellence.

COUNTY AUXILIARIES

Black Hawk

During a meeting held in the home of Mrs. George A. Bairnson, in Cedar Falls on March 17, the Black Hawk County Medical Auxiliary elected the following officers for the coming year: Mrs. William Telfer, president-elect; Mrs. Fred Dick, first vice-president; Mrs. Bernard Diamond, second vice-president; Mrs. Robert Buckles, recording secretary; Mrs. A. M. Dolan, correspond-

ing secretary; and Mrs. Eugene Smith, treasurer.

The Black Hawk Auxiliary has adopted the pre-school vision-screening program as one of its projects. The work will be under the direction of Mrs. Gardner Phelps.

Dr. and Mrs. Fred Gerken have had to postpone a trip abroad because Mrs. Gerken has been taken ill. As this is written, she is a patient at St. Francis Hospital, Waterloo.

Dallas-Guthrie

On March 19, the Dallas-Guthrie Medical Auxiliary met for dinner in Guthrie Center. Mrs. E. E. Lister, the president, presided at a business meeting held in the home of Dr. and Mrs. Herbert Neff. Mrs. Richard Steves, of Des Moines, was a guest. Mrs. Keith Chapler, of Dexter, gave a very informative talk on communism, using as the basis for her remarks Mr. J. Edgar Hoover's book *MASTERS OF DECEIT*.

Page

The Woman's Auxiliary to the Page County Medical Society met in Shenandoah on Thursday evening, March 19. After the social hour and dinner with the doctors, they discussed and made plans for the state meeting in Des Moines, which several members planned to attend.

The Future Nurses of Clarinda took a conducted tour of the Nebraska Methodist Hospital, in Omaha, on February 25. They were shown all of the facilities connected with the school of nursing there, and the assistant director in charge of student personnel services conducted a question-and-answer session with them. The highlight of the trip for most of the girls was having an opportunity to watch a nurse feed one of the premature babies in an incubator. The girls were accompanied by Mrs. Ruth Harper, the school nurse; Mrs. Earl Bassingham; and Dr. and Mrs. W. S. Frankel.

The Auxiliary is planning a spring tea for the Future Nurses of Page County, to be held at the home of Mrs. Harold Henstorf, in Shenandoah. About 54 girls are expected.

Polk

At a meeting of the Polk County Medical Auxiliary, held in Des Moines at the home of Mrs. Neil Garvey on March 18, plans were made for the group's annual spring brunch at the Wakonda Club on May 8. The committee in charge of that event includes Mmes. R. B. Allender, H. K. Shiffler, S. J. Zoeckler, C. H. Gutenkauf, Donald Schissel, J. Fred Throckmorton, D. R. McBride and R. R. Updegraff.

WOMAN'S AUXILIARY TO THE IOWA STATE MEDICAL SOCIETY

President—Mrs. H. C. Merillat, 116 Lincoln Place Drive, Des Moines 12

President-Elect—Mrs. E. A. Larsen, Centerville

Secretary—Mrs. Wm. C. Shinkle, 307 49th St., Des Moines 12

Treasurer—Mrs. E. A. Vorisek, 6205 Woodland Rd., Des Moines 12

Editor of THE NEWS—Mrs. E. T. Burke, 601 S.W. 42nd Street, Des Moines 12

Asst. Editor of THE NEWS—Mrs. D. F. Crowley, Jr., 663 44th Street, Des Moines 12

President-Elect's Address

JOHN W. BILLINGSLEY, M.D.

NEWTON

THERE IS NO BETTER TIME than the present for all of us to remember that before we were doctors we were citizens, and prospective taxpayers and parents. We are now—all of us—trustees of a great and noble heritage of freedom, trustees of a political and economic order which made it possible for those of us who came from humble circumstances to get the expensive education which we never could have dreamed of getting in most countries of the world. Thus, our obligations as citizens to preserve the freedom under which we were reared must influence our thinking and conduct as doctors!

Bernard M. Baruch once said, "Preserving our freedoms is our most important job today—not making money." Freedom has brought to our country the finest medical care in the world; and it has also brought doctors an opportunity to make an honest "buck."

There are at least three essentials to good medical practice. All of them are present in freedom of medical care; all of them are lost under socialized medicine. First, the relationship between patient and doctor must be wholly voluntary on both sides. Under government management, the relationship cannot be wholly voluntary, and it is the patient who will suffer, rather than the doctor. Next, when the doctor is paid by the patient, he works for the patient. When the doctor is paid wholly or in part by the government, then little by little he comes to work for the government, and the patient suffers. What kind of care will the patient get, with both the government and the doctor managing his case? Third, doctors like everyone else must have incentives if they are to do their best. These incentives include financial rewards commensurate with their efforts, and professional recognition and advancement as well. On the other hand, the essentials of success under a bureaucratic system are to live long enough to advance in the bureau, to make no enemies, and to conform to rules and regulations.

Freedom in medical care is not on trial; it is socialism that is on trial. Society, through the ages, has given the doctors the right to charge according to their patients' ability to pay. On the other hand, good health is not free. It is getting to be so expensive, in fact, that a lot of families are wondering whether they can afford it. Every family may expect 2.6 major illnesses this year, and one person in 10 will require hospital care in 1959. The public wants to make its own appraisals and wants the costs of medical care met. The public wants a non-governmental system of protection against the

costs of illness. The American Association of State Insurance Commissioners has recognized that "service" contracts are the best insurance in the health field. But Mr. Francis R. Smith, insurance commissioner in Pennsylvania, has put his finger squarely on the alternatives that face us. "If the medical world doesn't come up with the solution," he declares, "the government will have to do so."

Socialized medicine would inevitably slow down or halt the progress medicine is making and will continue to make as long as doctors are free to go ahead and develop new ideas and methods of treatment. The secret of growth and prosperity is the right of American citizens to go ahead, to create, to produce and to expand.

Let us remember that the socialistic state is one in which everything that is not given is forbidden. It is just as impossible to be "just a little socialistic" as it is to be "just a little bit pregnant."

Freedom is never free; it must be bought on the installment plan, and the coin in which we must pay for it is vigilance and responsibility. We can dodge our responsibilities, but we cannot dodge the effects of dodging our responsibilities. Those responsibilities include our right of franchise. We must vote! We must participate actively as citizens! We must offer ourselves as candidates for public office!

Both patriotism and good sense require that all of us citizens, no matter how specialized our training, must be willing to go into public service, just as our sons sacrifice or at least postpone their careers to go into the armed services in war time. Those who believe in the free enterprise system must continue unremittingly to work for the continuance of that system if it is to survive.

In all of our public relations, let us remember that he who seeks equity must do equity, and let us make sure that the doctor-patient relationship is abused neither in our own practices nor in those of our confreres.

Doctors, by their training, are stubborn and individualistic, but they are *not* "bull-headed." Thus, let us do away with tension, friction and crisis. Let us give up negativism, bellyaching, defeatism and fear, and go along with Theodore Roosevelt, who said, "It is not the critic who counts; but the credit belongs to the man who is actively in the army—who spends himself in a worthy cause."

In conclusion, let me agree with William James, who exclaimed: "This is a terrible country *not* to live in!"

A Renaissance in the Concept of Care for the Mentally Retarded

WILLIAM C. WILDBERGER, M.D. AND GRACE M. SAWYER, M.D.

WOODWARD

THE PROBLEM of mental retardation and/or mental arrest is a complicated one for which there is no easy, simple answer. Historically, individuals with one or the other of these afflictions, if not kept in semiseclusion at home, have been kept in jails, put under legal surveillance as quasi-criminals, regarded as special problem children by educators, and thought of by psychologists as lacking in essential psychic attributes and thus virtually beyond help. Because the basic difficulty that such individuals present is mental, medicine in general and child-developmental pediatricians in particular have assigned responsibility for them to the psychiatrists, thus overlooking the fact that care must be provided for the whole child.

In its campaign to set up standards for and to inspect institutions for the mentally retarded, the American Psychiatric Association has acknowledged the complexity of the problems with which such facilities deal by classifying them as "hospital-schools."

In the past, many doctors of special bent and interest have devoted their lives and have worked hard in caring for and attempting to understand the mentally retarded. The fact that they have not come up with a well-knit and simple answer proves that there is no single solution. For example, the concept of "rehabilitation" which has lately been advanced, although a worthy adjunct to the older methods of therapy, is not a panacea for the mental, physical and spiritual problems of the retardates themselves or for those of their aghast parents, relatives, friends and communities.

THE "TEAM APPROACH" IS CALLED FOR

When one is dealing with the "human factor and equation," he is dealing with a thing mighty complex—far more complex than the "sputniks" of the physical sciences. In saying so, we do not mean to suggest that the problem has no solution; rather, we suggest that the problem can be solved only by a concerted effort and through the use of many and manifold resources.

The establishing of the diagnosis has been and always will be a medical responsibility. This task should lie mainly in the domain of the pediatrician—especially of the pediatrician who is specifically interested in the mechanisms of development in

the abnormal child. It is he who should have the direction of the integrated care given the child, and it is he who should call for and obtain assistance from other disciplines, first those within medicine itself such as neurology, psychiatry, etc., and then those outside medicine such as psychology, special education, social service and other allied agencies. All that is done should be integrated so as to provide total care for the child, physically, mentally, emotionally and spiritually.

Formerly, private or public institutions or residential schools were the main, or in some cases the only, answer for the problem, but nowadays many communities have developed their own programs for the mentally retarded. Some of them have special community centers and private day-schools for their care and special training.

School committees and the superintendents of public schools have developed special classes to help borderline children in conventional school settings. This programing, for the most part, admits the educable group and only a handful of trainable (i.e., totally dependent) retarded children. Of the educable group, only a small number are being recognized and placed correctly. Most such children can still be found sitting in regular school grades, being refused admission to special classes and leaving school as soon as possible, or being sent to state or private institutions when they have caused trouble in the home, in the community or in the school.

Modern-day services for the mentally retarded have developed in a piecemeal, haphazard fashion. Each of the programs in institutions or residential schools, in public school systems, in private homes and in communities has developed for the purpose of answering a specific need. Each is intricate, individual and isolated in its endeavor. For these reasons, there is dissatisfaction, not with these existing facilities, but with the more or less complete lack of facilities in certain areas, and with the lack of coordination among the agencies providing services where such services exist.

We are now at a stage in the evolution of the care of the mentally retarded at which we should take a long, hard look at the growth of such programs so as to determine where there are defects and gaps, and to realign our thinking with a view to providing programs for *all* retarded children.

Dr. Wildberger is clinical director and Dr. Sawyer is superintendent of the Woodward State Hospital and School.

At present, retarded children are being cared for (1) in private and public institutions and residential schools; (2) in special classes for the educable ones of the mentally retarded in public school systems; (3) in some parent-sponsored and a few public-school classes for the trainable, as distinguished from educable, retarded children; (4) in sheltered workshops; and (5) in their own homes. We propose that the endeavors of these five types of agencies be integrated according to a plan represented in Table 1. We fully recognize that such relationships do not exist at present, but contend that we are people of vision, not visionaries, and see this as the coming thing and the thing to come—namely, A Community Center for the Mentally Retarded.

On the federal level, there is a renewed interest in the plight of the mentally handicapped child. Twenty-eight states are receiving special-project grants from the federal government, and plans for projects in three more are in the process of being approved. Five other states are financing programs dealing with mental retardation by means of regularly apportioned federal materials and child-health funds, and state-and-local matching funds.

The federal government is interested in setting up mental-retardation clinics as specifically defined nuclei. Each of these establishments would have as its staff (1) a pediatrician and medical director; (2) a psychologist; (3) one or two social case workers; and (4) a pediatric nurse. Other child-development specialists such as a speech therapist would be available on a part-time basis, and neurologists, psychiatrists and other medical specialists would be available for consultation.

From a mental-retardation clinic to a community center for the mentally retarded would then be but a single, logical step. Utilizing the financial resources of federal, state, county and voluntary health agencies, community chests and parents' contributions, such a program could well be realized and carried on effectively and efficiently.

THE COMMUNITY CENTER

The Community Center would include four units: (1) a temporary residential unit; (2) a day school for trainable children living at home. (3) a sheltered workshop; and (4) a consultation unit for work with parents. As a whole, it would be an outlying adjunctive facility integrating the services of the State Department of Health and its Division of Maternal and Child Welfare, the State Department of Institutions, and the State Department of Public Instruction. It would provide care for those children not presently in residential schools or in the public school classes for the educable mentally retarded.

The Residential Section. A local facility could maintain a residential unit to house, feed and care for between 10 and 25 individuals for short periods of time. (1) It could house retardates who have no homes and are returning from the state hospital-schools for job placement and adjustment within the community. In this respect, it would serve as a half-way house. (2) The residential unit could house individuals waiting for placement in the state hospital-schools. Thus parents and retardate could have a chance to try out the idea of their living apart from one another. (3) The residential unit could provide temporary care for retardates during times of home emergency. (4) It could also facilitate a family-care program.

The Day School Section. The community center should contain a day school unit staffed by certificated teachers in the employ of the public school system. The educational programs should be designed especially for the mentally handicapped, just as programs are now provided for the physically handicapped. The children attending this day school should be the trainable retardates living at home or in the residential section of the center.

The Sheltered Workshop Section. The community center should include a sheltered workshop for retarded individuals beyond school age. (1) It could give trainable retardates who are living at home an opportunity to become economically useful in a sheltered environment. (2) It would

TABLE 1
A COMMUNITY CENTER FOR THE MENTALLY RETARDED

Residential Section	Day School Section	Consultation Section	Sheltered Workshop Section
1. For individuals from hospital-school for job placement. 2. For individuals awaiting admission to hospital-school. 3. For trial period away from home. 4. For temporary residence in times of family emergency. 5. For a family-care program.	1. For trainables living at home. 2. For children in residential section.	1. For giving information to parents. 2. For instructing parents in home care and training. 3. For counseling.	1. For retarded individuals above school age who are living at home. 2. For individuals who might be released from hospital-school for job training. 3. For recreational activities designed for both of the above groups.

furnish the older individuals who have been returned by the state hospital-schools either to their homes or to the temporary residential section of the center an opportunity for job training, placement and follow-up. (3) It would furnish recreational opportunities for the older retardates in the residential section of the center and for those living at home.

The Consultation Section. This part of the community center should offer to parents and other of the patient's relatives whatever information and advice they need about the services offered by public and private agencies and diagnostic centers, and should give them consultation regarding training and home care.

The workers in such a community center could assist parents from the time they find that their child is retarded until they have found a permanent arrangement for him. They would know what agencies could diagnose the child's difficulties, could furnish them information on his medical, psychological and social status, and could advise them concerning his future placement. They could chart an advisory plan for each individual so as to let the parents know what the future course will be and what the child will be able to do.

A complete diagnostic team consisting of hospital-school personnel could travel from one community center to another for the purpose of examining and evaluating individual children.

The community center organization should fill in the gaps that exist in our present facilities for the care of the mentally retarded. It should help to coordinate the present unrelated attempts at classes for the trainable. It should provide halfway houses between individual homes and institutions; it should provide sheltered workshops; and it should offer family consultation. Besides helping children themselves, it should thus be of tremendous benefit to institutions, families and schools. The overcrowding of institutions would be relieved, since large numbers of retardates could be cared for satisfactorily at home, and since it would no longer be necessary for hospital-schools to house and otherwise look after children undergoing admission study. Parents should welcome such an integrated community center, for it would give them an opportunity to place their children in a residential section on trial. The parents thus could have opportunities to try out various provisions for their children before coming to a final decision. The local public school systems should welcome such a community center. They lack classroom space for the separate handling of trainable children, and have had difficulties in dealing with them otherwise because of the inability of the merely trainable child to mingle with or participate in the activities of other children. Under these circumstances, the creation of special classes for trainables at a community center would come as a Godsend. In addition, such an

arrangement would help the schools achieve the ideal of American education—namely, training for all children, regardless of sex, race, creed or intelligence level.

THE NEED FOR HOSPITAL-SCHOOLS WILL REMAIN

The development of community facilities for the retarded has renewed interest in the role of the institution. We regard it as the institution's function to care for the total child and to develop and manage his overall personality and his relationship to other personalities. It is our endeavor to help the child become a productive member of his community, whether that community is within the institution itself, or in society beyond the boundaries of the institution.

The following are the groups of individuals whom we regard as needing institutional care:

1. The most severely retarded who cannot develop a relationship with anyone and are completely dependent.
2. Those who are moderately retarded but cannot be cared for at home because of their antisocial behavior.
3. Retarded adults who are dependent and no longer have anyone to care for them.
4. Some children whose home conditions make it impossible for them to be left there.
5. Moderately retarded adolescents who can receive vocational training at an institution but not in their own communities.

CONCLUSION

Living in a democracy as we do, we acknowledge our indebtedness to the Judeo-Christian philosophy that exalts the dignity of the individual under God Almighty. We must never cease reminding ourselves that the retardate is a child of God and a product of man—an individual who through no fault of his own has shown up on this planet lacking in wherewithal for his social and economic advancement. We, the more fortunate ones and the individuals whom society has enabled to receive special training and experience, must take special responsibility for the retardate, whose problems are frequently too much for his parents, relatives, friends and community. Furthermore, besides being specially trained, educated and experienced people, we are above all human and humane!

SUMMARY

There has been a rebirth of interest in the mentally retarded and in his care. A total program for the individual child has been outlined and presented. Also, a total program for all types and levels of retardates has been proposed, with overall integration of isolated facilities and agencies.



Scientific Articles

Cellular Pathology, 1858-1958

R. F. BIRGE, M.D., AND DAVID BARIDON, JR., M.D.

DES MOINES

NOWADAYS, WHEN there is much talk about exfoliative cytology as a new, promising approach to the early diagnosis of cancer, it is interesting to review a symposium published in the *JOURNAL OF CLINICAL PATHOLOGY* for November, 1958, commemorating the centenary of Rudolph Virchow's revolutionary *CELLULARPATHOLOGIE*.

One hundred years ago, Virchow introduced "a new view of the cellular nature of life processes, both physiological and pathological . . . in opposition to the humoral and solidar views which have been transplanted from the myths of antiquity down to our own time."¹ Virchow's dictum "*Omnis cellula e cellula*"—that every pathologic cell has its physiologic prototype—has proved to be the very basis of modern pathology.

In the second article of the symposium, Bamforth and Osborn² relate that in Virchow's day Lionel S. Beale, of London, had insisted on the examination of vaginal mucus in a pure state, giving full instructions for warming slides in order to identify *Trichomonas vaginæ*, which he regarded as "merely a cell of ciliated epithelium from the uterus." Beale also believed that "in cases of cancer of the uterus, we should expect to meet with cancer cells in the discharges." His book, *THE MICROSCOPE IN MEDICINE*, was first published in 1854, and the 1878 edition illustrates desquamated cells in the urine in a case of cancer of the uterus. It also depicts cancer cells in the sputum.

Emphasizing that diagnostic cytology is the senior science, Bamforth and Osborn recall that the early technics used by Virchow, leading to the publication of his work on cellular pathology, were more akin to those of the cytologist than to those of the morbid anatomist.

Unfortunately, as years passed and histologic technics were perfected, many pathologists came to deny cytology a role in diagnostic methodology. Yet Dudgeon² had begun in 1925 to be interested in the identification of cancer cells in freshly-removed surgical specimens. After scraping the cut surfaces with a scalpel, he fixed and stained a film of the juice so obtained. This method of detection of malignancy has wide application today. Cytology and frozen section are not rival methods, but instead are sometimes used together advantageously. Smear preparations give an excellent high-power view of tumor cells, but of course do not indicate their behavior. Frozen sections give us somewhat crude low-power views of tissue structure, good enough for accurate diagnosis of breast cancer, but they sometimes are unsatisfactory in other lesions such as cerebral neoplasms.

It is probable that cytologic methods were used by many others in various limited ways long prior to 1943 when Papanicolaou and Traut³ published their monograph which so well demonstrates the applicability of cellular studies to the diagnosis of neoplastic diseases. For example, James Ewing, who died of carcinoma of the bladder in 1943, recognized cancer cells in his own urine prior to tissue diagnosis of his condition. One of us can recall that A. C. Broders, a practical pathologist with far more vision and imagination than many, was accustomed a generation ago to examine ascitic and pleural fluid for the presence of cancer cells.

Morphologic hematology is a field which has fascinated many physicians for over half a century. Blood and bone marrow smears may be regarded as cytologic preparations *par excellence*, and those who have discounted the potentialities and scope of the broad field of cellular pathology have nevertheless long recognized the value of careful microscopic observation of the peripheral blood and bone marrow.

This paper, read at a meeting of the Medical Library Club, in Des Moines on March 11, 1959, has been somewhat condensed in preparation for publication.

For modern pathologists, the study and identification of exfoliated cells has become both fascinating and challenging, despite the fact that the work is tedious. This attitude is understandable, for one probably cannot become a good tissue pathologist unless he is a meticulous microscopist—one who pays attention to microscopic detail.

Bamforth and Osborn ask: "What then should be the place of diagnosis from cells today?" They reply: "It is the same as it was 100 years ago, and has been in a limited number of laboratories since then. It is only one way of looking at a diagnostic problem, but when correlated with diagnostic methods it is always interesting and often of the greatest value, and may lead to the correct diagnosis of cancer when inspection and biopsy fail."

THE CONCEPT OF SCREENING

There are two approaches to the diagnosis of neoplastic disease in the field of cellular pathology. One is cancer diagnosis by individual case study. The other is cancer detection by the use of screening technics.

In the past, our approach has been largely limited to the examination of selected specimens in individual cases. Today, more attention is being given to the concept of the screening method of cancer detection.

The purpose of screening is to diagnose cancer in apparently healthy people who complain of no symptoms and show no alarming physical findings.

We believe that screening methods are applicable to your practices. How extensively you use them or whether you apply them at all is a matter which requires individual consideration and adaptation to one's own practice concepts. It is true that the percentage yield of positive findings is rather small. Cost factors are important. Nevertheless, one cannot diagnose cervical cancer in its earliest stages by palpation and inspection.

As pathologists, our approach to the problem has been conservative. Though at first we were skeptical of the value of the examination of the cervical smear as a screening technic, we are now convinced that the method is worthwhile. How could one conclude otherwise after being fortunate enough to discover cervical and uterine cancer in its earliest stages among women of this very community—your own patients?

PRINCIPLES OF PROCEDURE

It is most important for pathologists to maintain close consultative relationships with physicians who submit bodily fluids for study. The College of American Pathologists⁴ has emphasized that "the best interests of the patient are served when the practicing physician who obtains the cellular material has close liaison with the pathologist who interprets the slide. False negative and false positive readings can best be detected as a result of close cooperation between the clinical physician and the pathologist who interprets the slide.

The objective of adequate screening and cytologic reading cannot be accomplished by application of mail-order methods in large cytologic centers. The cellular material always represents an individual patient, and the problems of diagnosis and therapy must be applied to the patient on an individual basis."

Nearly all of the pathologists in this area are giving special attention to cellular pathology, often with the aid of cytotechnologists. Our own faith in the importance of the field has stimulated us to set up a laboratory where cytotechnologists may work comfortably, without distraction. The cytotechnologist has been especially trained to make preliminary studies of cell preparations. She systematically scans each smear or section prepared from bodily fluids. She then marks abnormal areas on slides in order to conserve the time of the pathologists, for the number of hours that he can spend at the microscope daily is limited.

We have studied nearly all of the bodily fluids, using whatever technics are best applicable to individual specimens. Frequently, for example, we not only make smears but also prepare cell blocks for mounted microscopic sectioning when examining ascitic fluid, pleural fluid and sputum.⁵

The same approach is used in the examination of bone marrow, where the combined study of smears and sections of aspirated material is essential for adequate survey.⁶ This approach enables one not only to see the trees but also to get a glimpse of the forest.

Cervical smears are best taken by the physician at the time he sees the patient and is doing the pelvic examination. This is very readily done without loss of time.

PITFALLS OF CYTOLOGIC DIAGNOSIS

Attempting to find tumor cells where no tissue structure at all is present poses difficult problems.

Cells showing many features of malignant neoplasia are sometimes found in inflammations or other conditions characterized by cellular hyperplasia of benign nature. Nevertheless, the cytologist must base his interpretations almost entirely on morphologic characteristics of cells. The work may become somewhat easier at times if tissue fragments happen to be present. When only individual abnormal cells are available for inspection, such features as nuclear hyperchromatism, anisonucleosis and increase in nuclear-cytoplasmic ratios are morphologic features upon which one must depend.

Therefore, it is perhaps essential for one who does cytologic work to be well grounded in pathologic histology. Only when he can envision the probable environment from which abnormal cells have escaped will he be able to give reliable reports concerning the probable presence of cancer.

It is an obvious conclusion that the pathologist must be conservative in his interpretation of cytologic preparations, and it is our philosophy

that the false reporting of the probable presence of cancer cells must be kept to a minimum. In order to make a constructive approach to reporting, we have utilized the classification of Papanicolaou.⁷ Under this system, Class I smears are those that show no cellular aberrations, and Class II smears are those that show cellular abnormalities which do not suggest malignancy. Classes I and II, then, are the negatives. Class IV smears have atypical cells which probably are neoplastic, for few benign conditions yield Class IV preparations. The reporting of Class V is essentially equivalent to a pathologic diagnosis of cancer.

There remains a group of cases wherein findings are suggestive of the possibility of malignancy inasmuch as atypical cells of uncertain significance are seen. We are obliged to report such cases as showing suspicious features—Class III. In these instances, the diagnostic burden must be thrust back upon the attending physician, who may be able to clarify the situation by cleaning up infection and then taking additional smears. In many instances, biopsy will be indicated.

With regard to cervical and vaginal smears, evidence of impaired follicular hormone activity is reflected in the vaginal and cervical epithelium. Factors such as the menopausal state and pregnancy yield cytologic features at variance from findings encountered in other women. Since trichomoniasis is occasionally associated with atypicality of squamous epithelial cells, one must be cautious in interpreting minor aberrations when vaginal and cervical smears contain trichomonads. On the other hand, if there is full-blown cytologic abnormality characteristic of malignancy, trichomonad infestation need not be incriminated.

When it comes to the detection of uterine corpus adenocarcinoma, the Papanicolaou technic is less reliable than in cervical cancer. Although the diagnosis is sometimes quite obvious, not infrequently the criteria of malignancy are not strikingly displayed in this disease.

The methodology of cellular pathology does, then, have definite limitations, and these limitations vary with each bodily fluid.

DETECTION OF CERVICAL CANCER

Despite technical difficulties, numerous reports seem to indicate that the method of Papanicolaou has considerable merit. The national pick-up rate of uterine cancer by means of smear studies varies from 5 to 10 per thousand. In the most recent report we have seen, that of Soule and Dahlin,⁸ the rate in a series of 90,257 cases was 7.5 per thousand.

A recent sampling of our own work is closely comparable. We have assembled data on 2,500 consecutive cases in which cervical smears were submitted to us by central Iowa physicians. Smears from 11.7 of each 1,000 of these women contained

atypical cells suspicious of malignancy. Subsequent investigation revealed 8 cancers per 1,000 patients. Of the 20 cancers detected in this small group, 19 were squamous cell carcinoma of the cervix, and one was an endometrial carcinoma. Five of the 19 cervical cancers were invasive neoplasms, and 14 were pre-invasive. Of special interest is the fact that 10 of the patients were in their thirties.

Our data compare closely with the experience of Soule and Dahlin based on routine examination of pregnant women at the first prenatal visit and of all other women over 25 years old. Atypical cells were found with essentially the same frequency: 11.7 and 11 cases per 1,000. The cancer pick-up rate was also approximately the same: 8 and 7.5 per 1,000.

Among the cases which Soule and Dahlin reported as Class V, 99 per cent had cancer. We found four Class V cases, all with cancer. Of their Class IV patients, 88 per cent had cancer. Six of our eight Class IV cases had uterine malignancy. Of their Class III patients, 53 per cent had cancer, whereas 10 of our 16 Class III patients were found to have cancer (62.5 per cent).

In both series, where satisfactory biopsy tissue was available, nearly all of the non-neoplastic cases with atypical cervical smears showed abnormalities such as basal cell hyperplasia and dysplasia associated with chronic cervicitis.

COMMENT

Space will not permit discussion of all of the numerous applications of cellular pathology to the diagnosis of disease. Hence, we shall conclude with some remarks about early cervical cancer.

Stoddard⁹ speaks of the transformation zone, which is the squamo-columnar junction of the cervix, stating that here many varieties of cellular abnormality can be found. He feels that carcinoma *in situ* may develop by stages in surface epithelium. He also concedes that metaplastic epithelium may be converted gradually to carcinoma *in situ*, rather than suddenly. Although morphologic observations that can be related to any concept of pathogenesis of cervical cancer are incomplete, one may speculate that recurrent epithelial regeneration and hyperplasia in the transformation zone could be the provocative stage of carcinogenesis following some unknown initiating stage in the distant past.

Although the morphogenesis and the pathogenesis of *in situ* carcinoma are by no means clear, Stoddard believes that the relationship of these fields of abnormal surface epithelium to invasive carcinoma has been clarified to a degree. He suggests that the demonstration of genuine micro-invasive foci in serial sections of these lesions is the morphologic link between the surface lesion and invasive carcinoma, contending that full-blown invasive carcinoma would have developed in time in these cases.

Kottmeier,¹⁰ writing in 1958, stated that at the Radiumhemmet, in Stockholm, little attention had been paid to carcinoma *in situ* prior to 1947. A review of small cervical biopsies obtained before that date demonstrated 31 untreated cases of carcinoma *in situ*. A frank invasive cancer had developed in 15 of the 31 cases. The time interval between the diagnosis of carcinoma *in situ* and invasive carcinoma varied from nine months to 17½ years. Eight of the 15 patients had died of cancer.

The other 16 patients were kept under careful follow-up observation for nine years or more. One patient died from intercurrent disease. Six gave birth to one or more children. Carcinoma *in situ* was still present in three cases. Hysterectomy was performed in another case, whereupon examination of the cervix revealed carcinoma *in situ*.

In summary, out of 31 cases of carcinoma *in situ*, 15 became invasive cancers. Four long remained *in situ*. Twelve may have regressed spontaneously.

You may be aware that apparent spontaneous regression of carcinoma *in situ* found during pregnancy has been described. Hence, it is interesting to note that none of the 12 patients just mentioned were pregnant at the time of biopsy.

Regarding atypical changes in the cervical epithelium during pregnancy, Walters¹¹ states that of 63 cases of dysplasia detected during or shortly after pregnancy, 38 either regressed or were removed in the process of biopsy, and 21 have persisted for periods of seven to 65 months. In three cases, a subsequent diagnosis of carcinoma *in situ* was established at the eighth, the fifteenth and the seventeenth month of follow-up, respectively. In one case, invasive carcinoma was ultimately demonstrated at the fifteenth month of follow-up.

As contrasted with dysplasia, when carcinoma *in situ* appears during pregnancy, it is our conviction the condition should be recognized as such by pathologists, and should be regarded with the same respect as any other pre-invasive carcinoma by the attending physician. Although hurried intervention is perhaps unwarranted, one cannot assume that the process will regress spontaneously after delivery.

TREATMENT OF CERVICAL CANCER

Treatment of squamous cell carcinoma of the cervix should not be initiated until one has determined with reasonable certainty whether he is dealing with pre-invasive cancer or with invasive cancer.

The preliminary report of the pathologist that a carcinoma appears to be preinvasive is not conclusive when only small biopsy specimens have been submitted to him. Carcinoma *in situ* tends to spread widely along the surface, in some cases far beyond the areas of infiltration. One must always recognize, therefore, that biopsy material may have

been inadequate to demonstrate the infiltration actually present.

Sharp-knife conization to include the entire squamo-columnar junction, when skillfully done and when coupled with an adequate histologic survey, should in nearly all instances differentiate invasive from pre-invasive cancer of the cervix. From various European institutions, Kottmeier¹⁰ has collected 19 cases having a biopsy diagnosis of carcinoma *in situ* in which a hysterectomy was carried out without the use of multiple biopsies, conization or serial sections. Each uterus removed showed an invasive carcinoma in the cervix. All of the patients died of cancer.

Conization coupled with cervical smear follow-up may constitute adequate therapy of carcinoma *in situ*. Many authorities prefer to do more extensive surgery.

When a cervical cancer is invasive, hysterectomy, other than radical, is probably not the treatment of choice.

SUMMARY

1. Various bodily fluids may be examined for the presence of malignant neoplastic cells. Techniques of preparation of fluids for examination vary, and not infrequently the use of both smears and sections will yield greater information than will one or the other alone.

2. The benefits derived by patients from cellular pathology studies will be augmented by the exercise of good technics in procuring specimens, and by adequate communication between the attending physician and the pathologist.

3. Our own experience to date, which correlates well with that of others, has convinced us that the smear examination is a sound method for the early diagnosis of cervical cancer.

4. Treatment of early cancer of the cervix should not be initiated until it has been determined by adequate pathologic study whether a lesion is pre-invasive or invasive.

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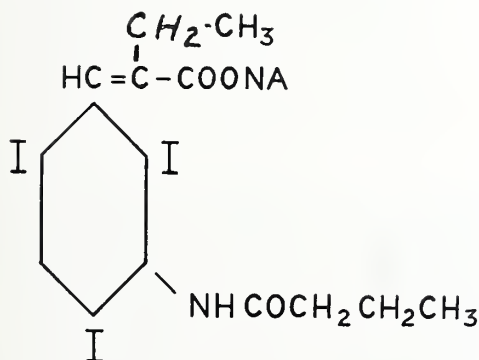
Trial Study With a New Oral Cholecystographic Medium: Orabilex

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IOWA CITY

SINCE THE ADVENT of the Graham-Cole test in 1924,⁴ numerous contrast media have been developed for the opacification of the gallbladder, each succeeding compound offering clinical and diagnostic refinements, thereby enhancing the accuracy of the radiographic impression and alleviating, for the most part, discomfort to the patient. Priodax, Monophen, Teridax and Telepaque are the more familiar compounds in use, and their comparative advantages and disadvantages have been well documented in the literature.^{2, 3, 6, 7, 8}

Orabilex,* a new cholecystographic medium, is a triiodinated compound containing 57 per cent iodine, and its chemical formula is 3-(3-butyr-ylamino-2, 4, 6-triiodophenyl)-2-ethyl sodium acrylate. Its structural formula is as follows:



The recommended dosage is 4.5 Gm., offered in six capsules of 0.75 Gm. each. Animal experimental work indicates a wide safety margin, greater than those of iopanoic acid or iodoalphonic acid.¹ Orabilex is contraindicated in acute nephritis or uremia. It should not be administered where disorders of the gastrointestinal tract exist which might prevent absorption.

CLINICAL STUDY

A trial study to determine the effectiveness of this new agent was accomplished in a group of patients (Table 1) selected at random during

Dr. Van Epps is head, and Dr. Behlke is a resident in the Department of Radiology at the S.U.I. College of Medicine. This report was presented at the annual fall meeting of the Iowa Radiological Society, in Iowa City, October 10-11, 1958.

* Orabilex for this study was furnished by E. Fougera & Co., Hicksville, New York.

routine medical examinations. All except 10 had symptoms suggestive of gallbladder disease. No patient had clinical jaundice. The heaviest patient weighed 255 lbs., and the lightest weighed 100 lbs., the average weight for the group being 154 lbs.

TABLE 1
AGE AND SEX DISTRIBUTIONS OF PATIENTS
RECEIVING ORABILEX

Age Group	Male	Female
17-29	2	11
30-39	5	14
40-49	8	19
50-59	13	16
60-69	10	21
70 and over	15	16
Totals	53	97

Patients were instructed to eat a regular evening meal at 5:00 p.m., and to take six Orabilex capsules at 6:00 p.m. at five-minute intervals without chewing, with water or fruit juice. Nothing per mouth was allowed after midnight. At 8:00 a.m. on the following day, the patients reported to the X-ray Department, where each was questioned regarding symptoms following the ingestion of the six capsules. The results were recorded as to the subjective degree of mildness, moderateness or severity of symptoms.

A preliminary film of each patient was not obtained, but routine prone and upright films were taken 14 hours after the ingestion of 4.5 Gm. of Orabilex. A radiologist reviewed these films and ordered lateral decubitus and coned-down views when he thought necessary. Post-cibum films were obtained as often as feasible, usually 30 minutes after the "fat meal." The "fat meal" consisted of 45 cc. of water mixed with 45 cc. of Saff,* an emulsion of safflower oil in water containing 46 per cent linoleic acid glyceride.

The degree of opacification of the gallbladder was estimated by means, basically, of Hoppe's and Archer's scheme.⁵ (Table 2.)

CLINICAL RESULTS

The patients' complaints after ingestion of Orabilex are tabulated in Table 3. No complaint

* Saff supplied by Abbott Laboratories, North Chicago, Illinois.

TABLE 2
SCHEME FOR GRADING CHOLECYSTOGRAMS

Adjective Rating	Description
None	No visualization.
Poor	Faint evidence of gallbladder concentration as shown by an area of increased density in the region of the gallbladder, but with no definition.
Fair	A faint shadow of the gallbladder with faint but visible definition.
Good	A distinct shadow of the gallbladder with satisfactory density and good definition.
Excellent	A sharp outline of the gallbladder with sufficient density to make the gallbladder stand out in brilliant contrast with the surrounding tissues.

of dysuria was elicited, nor was there any manifestation of allergic skin sensitivity. Following the ingestion of six capsules of Orabilex, 79.3 per cent of the patients had no symptoms, and 17.0 per cent had very mild complaints. Two patients complained of dizziness, but this difficulty had been present for several years, intermittently, and could not be directly attributed to the drug under study. Three patients complained of severe nausea and vomiting, but these symptoms had been present prior to the ingestion of Orabilex, and it was felt that at most, the drug aggravated complaints already present. Only two patients complained of moderate nausea and vomiting, and one patient had moderate vomiting and cramps.

The degrees of gallbladder opacification, recorded in Table 3, demonstrated good to excellent visualization in 61.4 per cent of cases. In 20 per cent of the 150 patients studied, gallstones were demonstrated. Eighty-nine patients were given a

"fat meal" with satisfactory gallbladder contraction observed in 87.6 per cent of cases. In 39.3 per cent of this group, the cystic and common bile ducts were visualized. The majority of patients showed no evidence of contrast material within the intestine, but 30.9 per cent of this segment showed a slight, fine radiopaque dispersion of contrast material, usually in the cecum and ascending colon. This did not interfere with the radiographic interpretation in any instance. Eight patients had barium in the colon from a previous gastrointestinal study, and no impression could be gained regarding residual Orabilex in the intestine. None of the patients refused the Orabilex because of its capsule form, and no patient experienced significant difficulty in swallowing the medium.

TABLE 3
TRIAL CHOLECYSTOGRAPHIC STUDY WITH ORABILEX

	Patients	Percentage
A. Side Reactions		
1. No reaction	119	79.3
2. Mild reaction		
(a) Nausea	8	
(b) Vomiting	3	
(c) Cramps	7	
(d) Diarrhea	4	
(e) Nausea and cramps	2	
(f) Diarrhea and cramps	1	
	25	17.0
3. Moderate reaction		
(a) Nausea and vomiting	2	
(b) Vomiting and cramps	1	
	3	2.0

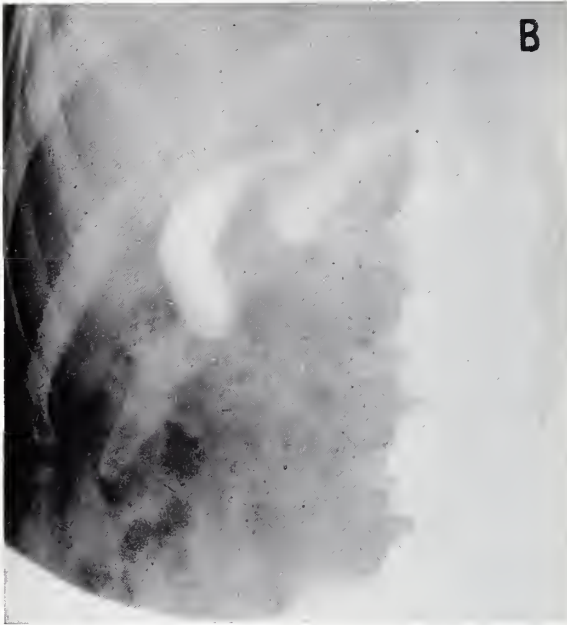
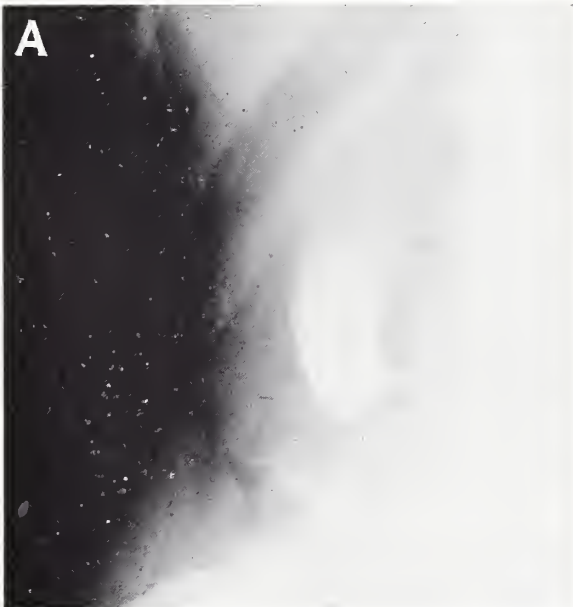


Figure 1. Roentgenogram of the gallbladder following the ingestion of six capsules (4.5 Gm.) of Orabilex in a 158 lb. female, showing excellent opacification of the gallbladder (A). The post-cibum film (B) shows good contractility and demonstrates the cystic and common bile ducts.

4. Severe symptoms		
(Vomiting and nausea)	3	2.0
	—	—
	150	100.0
B. Degree of Opacification		
1. None	32	21.3
2. Poor	17	11.3
3. Fair	9	6.0
4. Good	40	26.7
5. Excellent	52	34.7
	—	—
	150	100.0
C. Presence of Gallstones		
1. None	120	80.0
2. Present		
(a) Radiopaque	9	
(b) Radiolucent	21	
	—	—
	30	20.0
	—	—
	150	100.0
D. "Fat Meal" Administered		
1. Yes	89	
2. No	29	



Figure 2. Roentgenogram of the gallbladder 14 hours after the ingestion of 4.5 Gm. of Orabilex showing numerous radiolucent stones in a small gallbladder that retains its function. There is a faint radiopaque dispersion of the Orabilex in the colon.

E. Satisfactory Gallbladder Contraction		
1. Yes	78	87.7
2. No	11	12.3
	—	—
	89	100.0
F. Post-cibum Visualization of Ducts		
1. No	54	61.0
2. Yes		
(a) Faint	15	
(b) Good	12	
(c) Excellent	8	
	—	—
	35	39.3
	—	—
	89	100.0
G. Residual Dye in GI Tract		
1. No	98	59.0
2. Yes		
(a) Minimal	42	
(b) Moderate	2	
(c) Dense	0	
	—	—
	44	31.0
	—	—
	142	100.0
H. Barium in Colon From Previous Examination		
.....	8	

CONCLUSION

Orabilex is a satisfactory oral cholecystographic medium with a low incidence of side reactions. Good to excellent opacification of the gallbladder may be obtained, and frequently post-cibum, the



Figure 3. Roentgenogram of the gallbladder 30 minutes after a "fat meal" showing excellent visualization of the cystic and common bile ducts. There is barium in the colon from a previous gastrointestinal examination.



Figure 4. A preliminary upright Orabilex cholecystogram (A) showing excellent visualization. Post-cibum film (B) demonstrating the cystic and common bile ducts. No evidence of contrast material in the colon.

cystic and common bile ducts are visualized. In most instances there is no trace of the contrast material in the intestine during the routine radiographic examination. When there is evidence of the compound present in the colon, it appears as a faint radiopaque dispersion, and does not interfere with film interpretation.

ADDENDUM

Since this paper was prepared, Teplick, Adelman and Steinberg, of Kensington Hospital, Philadelphia, have reported in the December issue of the AMERICAN JOURNAL OF ROENTGENOLOGY, RADIUM THERAPY AND NUCLEAR MEDICINE on 112 cases of oral cholecystography using Orabilex, concluding that this new medium has definite advantages when compared with Telepaque.*

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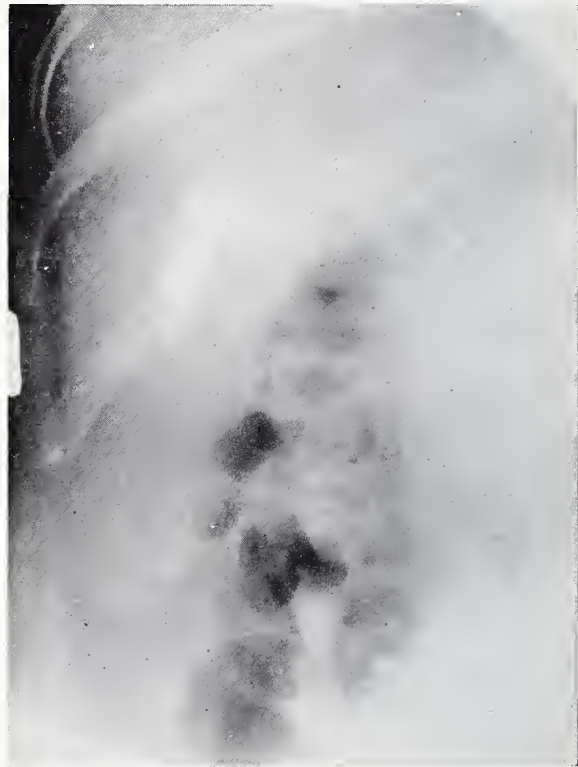


Figure 5. Roentgenogram of the gallbladder 30 minutes post-cibum, showing good contraction with visualization of the cystic and common bile ducts. Note the absence of residual Orabilex in the intestine.

Amebiasis in Iowa: An Incidence Study

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AMEBIASIS IS THE state of being infected with *Entamoeba histolytica*. It is a disease that is world-wide in distribution, cases having been diagnosed as far north as the Arctic Circle. The incidence of amebiasis is higher in warm climates than in the temperate zones, but the disease is by no means a tropical one. Faust and Russell¹ state that a conservative estimate of infection with *E. histolytica* in the United States is at least 10 per cent. The infection rate may be more than 50 per cent in areas where sanitary facilities are poor or lacking, and it may be relatively high in areas with good sanitation. The purpose of this study was to estimate the incidence of amebiasis in Iowa.

Microscopic examination of the feces of 135 patients at the State University of Iowa Hospitals and 15 volunteers resulted in the discovery of four cases of amebiasis, or 2.67 per cent of those examined. Of four patients with positive findings, two displayed definite clinical symptoms suggestive of amebiasis, and two did not. One of the asymptomatic patients was an 18-year-old male who had been referred to the Medical Out-Clinic for enuresis. A routine single-stool examination revealed that he harbored *E. histolytica*, *Endolimax nana*, *Iodamoeba butschlii* and *Entamoeba coli*.

COLLECTION AND EXAMINATION OF SAMPLES

The personnel of the out-clinics and laboratories at University Hospitals made all of the patient contacts and informed the examiner by telephone when the samples were ready. In addition, portions of each saline purge were set aside for this study.

In so far as possible, each stool was subjected to examination within 30 minutes after it was passed. After a gross examination, portions of the stool were preserved in polyvinyl alcohol (PVA) and formalyn (5 per cent) for staining and later study in accordance with the procedures of the Iowa State Hygienic Laboratories,² based on the techniques presented by Brooke and Goldman.¹² Immediately thereafter, a double cover glass mount was prepared on a warm slide, with one portion of the warm stool examined in 37° C physiologic saline and one portion examined in an iodine stain.

The zinc sulfate flotation concentration technic was used routinely on 17 specimens and then stopped since it was time-consuming and did not seem to be aiding materially in the search for pro-

tozoa. Thereafter, the technic was used only in the examination of suggestive cases.

One day each week was set aside for staining and examining the PVA-preserved specimens. While the staining procedure was in progress, the formalin-preserved specimens were centrifuged and the sediment was examined in an iodine stain.

IDENTIFICATION OF PARASITES AND COMPARISON OF METHODS

Wet smear in physiologic saline. A wet smear in physiologic saline is used in the search for protozoa in the living state. Many morphological features readily observed with the various stains are missed, but an experienced examiner observing a trophozoite resolutely crawling across the microscopic field displaying a clear pseudopod and possibly containing ingested red blood cells will diagnose *E. histolytica* with some degree of certainty.

The characteristic motility of the flagellates such as the "falling leaf" aimless travel of *Giardia lamblia*, or the undulating motion of *Trichomonas hominis*, is oftentimes sufficient for diagnosis. Also, several of the cysts can be positively identified for accurate diagnosis. In fact, the Naval Medical School at Bethesda, Maryland,³ lists the following positive diagnoses which can be made with a wet mount, experience and good fortune:

- E. histolytica*—trophozoites and cysts
- E. coli* cysts—with visible nuclei
- I. butschlii* cysts—with visible glycogen mass
- D. fragilis*
- G. lamblia*
- C. mesnili*
- T. hominis*
- B. coli*.

The wet mount is a good technic, well suited to be the first preparation made and studied. It may indicate whether a specimen is negative, positive or "possible," with fair accuracy. Various authors challenge the high degree of faith that many laboratories have placed in this method, saying that a negative report based on this method alone is inconclusive. For instance, Harper, Little and Marshall,⁴ in their comparison of several technics including direct wet mounts, zinc sulfate flotation, PVA-preserved stools and merthiolate-iodine-formaldehyde-concentration (M.I.F.C.) preparations, found that of all cases of all protozoa positively diagnosed, only 46 per cent were seen in a wet mount, and that in the case of *E. histolytica* only 31 per cent were seen.

Of the four cases of *E. histolytica* infection that we diagnosed in the course of our study, we missed

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one completely on wet preparation. As a matter of fact, three separate examinations of a saline-purged specimen done on a single day were reported as "negative," each by a different examiner. Of the three other cases that were definitely diagnosed, two were identified on wet preparation and one was classed as "possible."

Wet smear with an iodine stain. A wet smear with an iodine stain was examined immediately after the saline preparation. Trophozoites and cysts are killed, and the trophozoites are usually disintegrated. The purpose of this technic is primarily to stain the nuclei and thus show their number and arrangement. Its practical value lies in assisting in the search for *E. histolytica* cysts, *E. coli* cysts, *I. butschlii* cysts, *E. nana* cysts and *Chilomastix mesnili* cysts.

Zinc sulfate flotation concentration technic. Faust and Russell⁵ and Craig⁶ relate that the zinc sulfate flotation technic will greatly enhance the probability of discovering *E. histolytica* cysts. In fact, Faust and Russell state that the number of positive diagnoses "will usually be doubled."

In this study, we gave up this technic since the time involved was so great as to interfere with the collection of samples and the study of slides prepared by the four other methods. A review of the literature revealed others who disagreed with the claims made for the efficacy of this method. Harper *et al.*⁴ found that the technic yielded results no better than those obtained from direct wet mounts. With reference to concentration methods in general, Stamm⁷ concluded: "The choice of method must depend on the facilities and time available, the experience of the technician, and perhaps most important of all, his temperament. An experienced, conscientious obsessional, working in good conditions and with time not a primary consideration, may well get better results by direct microscopy than by routine concentration, particularly if microscopy is more to his taste than faecal alchemy."

Examination of formalin-preserved specimens with iodine stain. The use of formalin-preserved specimens with iodine stain is part of the two-vial method^{2, 12} of the Iowa State Hygienic Laboratories and is, in effect, a concentration technic. It yielded good results in our search for cysts. The preserved specimen was strained through gauze into centrifuge tubes, spun down, and examined with an iodine stain. By means of this technic, we discovered two cases of *E. coli* that we had not found by the other three methods. Thus, it proved to be a useful adjunct to the PVA-fixed smears.

PVA—fixed smear—iron hematoxylin stain. The use of a PVA-fixed smear with an iron hematoxylin stain proved to be the most reliable technic in this study of amebiasis. It marked the culmination of each week's collection of specimens. The permanent slides obtained were used for the final decision as to whether or not intestinal protozoa existed in the stools examined. One and sometimes two parasitologists examined each "positive" and

"possible" case, in order to check on the previous findings.

The staining process that was used required 45 minutes after the PVA-stool mixture had thoroughly dried on the microscopic slide. Each slide was then scrutinized for the minute morphology (primarily nuclear detail in the case of intestinal amoebae) which enables one to state with a fairly high degree of assurance just which parasite is being observed.

The technic is time-consuming, and the microscopist must be specially trained to read the iron-stained slides, but the results are fruitful. Harper *et al.*⁴ claim even better results with the M.I.F.C. technic of Blagg, Schloegel, Mansour and Khalaf.⁸ Such a comparison was not run in our laboratories.

The PVA-fixative method outlined below is the one used in the Iowa State Hygienic Laboratories and in the Central Laboratories of the University Hospitals:

1. Portions of the stool are preserved in PVA, as outlined in the two-vial method.
2. Two drops of the PVA-stool mixture are spread on a slide and allowed to dry thoroughly (preferably at 37° C overnight, although good results are obtained after greatly abbreviated drying).
3. Slides are stained according to the modified Heidenhein stain technic (destaining, self-limiting) as modified by Tompkins and Miller.⁹

INCIDENTIAL FINDINGS

MISCELLANEOUS AMOEBAE AND FLAGELLATES

In our search through 150 specimens for *E. histolytica*, we found the following *single* infections:

Number of Cases	Protozoa
2	Entamoeba coli
2	Giardia lamblia
1	Dientamoeba fragilis
3	Endolimax nana
1	Trichomonas hominis
1	Chilomastix mesnili

The following *multiple* infections were discovered:

Number of Cases	Protozoa
1	<i>E. histolytica</i> , <i>I. butschlii</i> , <i>E. coli</i> and <i>E. nana</i>
1	<i>I. butschlii</i> and <i>E. nana</i>
1	<i>E. histolytica</i> and <i>D. fragilis</i>

In addition, one case of *Strongyloides stercoralis* was seen.

STATISTICAL EVALUATION

The discussion in this area will be limited to calculations relating to the incidence of amebiasis only. The object of this incidence study was to ascertain how many Iowans seen at the University Hospitals harbored *E. histolytica* in their intestines. It was decided that a random sampling should be run of all patient arriving at the medical and

pediatrics out-clinics. As the program progressed, specimens from volunteers were accepted, and stool samples sent to the Central Laboratory for diagnosis were incorporated into the study. In so doing, the concept of randomness seems to have been violated.

Stools from all age groups, from two months to 87 years, were studied, and the numbers of samples from all of the intervening 10-year age groups were fairly even. Consultation with a statistician indicated that the assumption of randomness might well be considered satisfied if the data conformed with the "median test of randomness" set forth by Freund¹⁰ in his MODERN ELEMENTARY STATISTICS. Application of this theory based on the age variable failed to indicate (>0.05 level) departure from a random pattern. Hence, the assumption of randomness was considered satisfied.

With reference to the amebiasis incidence indicated by the findings in our study at University Hospitals, we find that 4 positives among 150 individuals constitute a positive percentage of 2.67. Cochran's unbiased-estimate formula¹¹ shows that \sqrt{p} (with $p = \frac{4}{150} = 0.0267$) is 0.0132. Therefore, within the 95 per cent confidence interval ($1.96 \sqrt{p} = 0.026$), the incidence of amebiasis lies somewhere between 0.07 per cent and 5.3 per cent of all persons tested.

DISCUSSION AND SUMMARY

The incidence of amebiasis as observed in this study of a random sample of patients seen at the State University of Iowa Hospitals from June 18, 1958, through September 9, 1958, was 2.67 per cent. This figure compares favorably with the results of numerous surveys shown in Faust and Russell's¹ Table 7.

In making the diagnosis of amebiasis in the laboratory, we suggest that investigators make at least three examinations on each specimen that clinicians have sent to the laboratory. As a result of our study, we recommend the following examinations:

1. Direct wet mount in warm physiologic saline
2. Iodine-stained smear (preferably on a formalin-preserved sample)
3. PVA-fixed smear—iron hematoxylin stained.

For reliability consistent with the effort and time available to laboratory personnel in most hospitals, it is recommended that a direct wet mount be *only the first step* in the search for protozoa. Too many diagnoses will be missed if this step *alone* is used.

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WISCONSIN PLAN FOR THE ELDERLY

The "Century Plan" announced by Wisconsin Physicians Service, the Blue Shield Plan of the State Medical Society will provide surgical, medical, hospital and nursing-home care for anyone 65 years of age or older at a monthly premium of \$9 per person. Physicians' services will be compensated in accord with a fee schedule for: (1) surgery wherever performed; (2) medical care during the first 60 days of a patient's hospitalization; (3) anesthesia and diagnostic x-ray when associated with surgery; and (4) radiation therapy for the treatment of proved malignancies. Hospital benefits up to \$10 per day for room and board and 100 per cent of miscellaneous expenses are provided for the first 60 days of confinement. Nursing home benefits are available within the same 60-day period, but only when the patient is transferred directly from a hospital to the nursing home, at no more than \$10 per day for board and room. When two months have elapsed since his last previous hospitalization and/or nursing home confinement, the policyholder is eligible for another 60 days of care. Out-patient hospital benefits are payable for the first visit because of surgery or within 48 hours of an injury.

The 2,800 physicians who participate in Wisconsin Physicians Service have agreed to accept benefits paid by the Century Plan as full payment of their charges when the policyholder's annual income is under \$2,000 (\$3,600 for a man and wife). About 330,000 Wisconsin residents are 65 years of age or older, and it is estimated that at least 50 per cent of them have little or no health insurance protection at the present time.

The Psychopathic Personality

TOM BENTLEY THROCKMORTON, M.D.

DES MOINES

JUVENILE DELINQUENCY, so called because the name seems best to denote the type of abnormal behavior manifested by many of our youth, has received much attention in the press, from the pulpit and from the platform. Voices are raised in pleas that something be done to stop the vandalism and youthful crime which seem to sweep over the country in waves. No city is too large nor any hamlet too small to suffer the ravages and depredations of these youthful delinquents. The surprising thing—one which often shocks a community—is that the misdeeds are frequently done by young people who come from excellent families and who never before have transgressed the law. Sometimes the act committed is so revolting as actually to stun both parents and community. Resentment follows quickly, and the public demands that the offenders receive prompt punishment. Then, the court is faced with the dual problem of deciding what is best for the transgressors and how society can best be protected against repetitions of such acts. The judge may parole the youngster, or he may send him to jail, to the reform school or to the men's reformatory, an institution to which youthful criminals are often committed.

If the court paroles the lad, it is with the hope that he may already have seen the error of his ways and have decided, once for all, that crime does not pay. If it sends him to the boys' reformatory, it is with the hope that he may learn some discipline there, and may be reminded that society does not condone his wrongdoing but is exacting in its demand that the law be upheld. If the crime has been of such magnitude as to warrant prison confinement, then the reformatory or prison doors swing open to receive him, and he is forever branded as a felon.

Now, the interesting question is whether any of these technics is efficient in dealing with the psychopathic delinquent and criminal, or whether they are just mileposts on a road that inevitably brings him to prison, to the electric chair, the gallows, the gas chamber or the firing squad.

Before attempting to answer that question, it may be well for us to consider what we mean when we speak of a "psychopathic personality." The word *psychopathic* comes from a combination of the words *psyche*, meaning mind or soul, and *pathy*, meaning disorder or disease. Thus, an individual with a psychopathic personality has a disorder of the mind which some psychiatrists claim may have resulted from trauma, from infection, from a tumor, from some type of degenerative dis-

ease or from some other kind of brain disorder. In the absence of any of these extraneous factors, it has been assumed, with some justification, that the psychopathic delinquent is an individual who was born without the ability to develop moral sense or judgment. In other words, he is amoral and incapable of developing a true moral feeling.

Having considered the meaning of the term *psychopathic*, let us now turn our attention to the meaning of the term *personality*. Perhaps the definition of the word is easier than its explanation. When we speak of a personality, we refer to the distinctive personal characteristics of an individual. It is that something which sets him apart from his fellow creatures and makes him what he is. In exploring this matter, we are obliged to go back a little farther and consider what it is that makes man different from the lower animals.

As recorded in Holy Writ, the creation of man was brought about when the Creator fashioned him in His own image and breathed into his nostrils the breath of life. Thus did man become a living soul. Even from the beginning, man has had dominion over all things, both animate and inanimate. He became a free moral agent. As he grew in intellect, he improved socially. He acquired a personality because he developed certain brain centers which the lower animals are incapable of developing. The higher psychic centers, mostly in the prefrontal lobes of the brain, the speech center in Broca's area, the visual centers where objects of sight and the written word are translated into consciousness, the hearing centers where sounds and the spoken word are brought into the field of consciousness, the stereognostic center through which man becomes conscious of the nature of objects through his sense of feeling alone, and the writing center—all of these are to be found only in the brain of man, and they are located largely in just one of the hemispheres. These centers, peculiar to man, are what make him distinctive in the animal kingdom and different from his fellow creatures. These are the centers from which personality springs. When the brain becomes disordered—either through hereditary influences or as a result of extraneous factors such as injury, infection, new growths, degenerative disease or some other malady—changes sometimes occur in the personal characteristics of the individual, and he becomes a psychopathic personality.

For many years, it was assumed that the psychopathic personality was the result of some hereditary influence. True, the so-called constitution-

al factors undoubtedly are of great importance as causative agents, for it is possible to trace a direct hereditary factor to one or both parents in some instances. The study of numerous cases indicates the importance of heredity in the transmission of individual personality traits. But there are examples of human conduct in which it is impossible to show any relationship between the background of the family and the deed committed by a youth who has always been considered normal. In such a case, the only logical conclusion is the one which has stood for generations—namely, that the youth is the “black sheep” of his family.

The laity has long known that occasionally a black lamb is born into a flock, and it surmises that such an animal is a throw-back to previous generations. On that analogy, a minister's son or the scion of society's upper crust who repeatedly has violated the law is excused frequently before the world as the “black sheep” of his family. Court records are so full of the misdeeds of black-sheep juveniles that no further comment is warranted here. Such folk are present in most every community and will continue to be present unless a way is found for developing a moral feeling in an individual who has been born without the ability to develop this peculiar but very necessary sense.

Let us now consider the agents which seem more frequently to enter into the causation of the psychopathic personality—namely, the acquired factors. Many psychiatrists who have given this subject much thought believe that changes in the brain occurring during gestation, at the time of birth, or during infancy, early childhood or adolescence are the primal causes of psychopathic personality. Among the acquired factors, trauma and infection head the list. Neoplasms, irradiation and degenerative diseases are relatively infrequent causes, but undoubtedly they play the leading role in the etiology of some cases of psychopathic personality.

Though it is true that hereditary defects exert their influence from the time of conception and therefore affect personality with maximal influence early in life, apparently many instances of personality defect arise as a result of cerebral trauma, including birth asphyxia. Severe uterine contractions or trauma to the abdomen of the pregnant mother can produce brain changes in the unborn child. Certainly, one can visualize great potentiality for brain injury during the passage of the child's head through the birth canal—aided in some instances by the obstetrician's forceps—and asphyxia, either *in utero* or postnatally, which may well produce irrevocable changes in brain cells and which later may result in personality defects.

Infection, also, must be considered as a causal factor. The exanthematous diseases of childhood, once thought to be of no great importance if the life of the patient was saved, must be considered

as a possibility where inflammatory changes implicate the meninges with secondary involvement of the cerebrum, or when brain cells are directly attacked by the viruses. It may be months or years after the subsidence of the acute inflammatory attack before changes become manifest in the personality of the affected child. I have seen epilepsy follow as a post-syndrome of epidemic encephalitis, and I have seen the Parkinson state develop in mature individuals many years after they had their initial encephalitis during childhood. The important thing to remember, however, is that brain changes must take place during the formative years when personality is ordinarily developed, if one is to expect the psychopathic personality to manifest itself. The consensus is that most of the characteristics of personality are in evidence by the time the child is five years of age.

Brain tumors not infrequently cause psychic changes, including those of personality. Here, of course, the causal agent, sooner or later, becomes obvious. Interference with normal brain-cell function—due to circulatory disturbance or direct pressure on the cells—can readily account for the psychopathic symptoms which result from such mechanical interference.

Irradiation of the brain prior to the formation of the personality also can account for some cases in which a psychopathic personality develops. Again, degenerative disease occurring early in the life of a child may bring about changes in the brain which later produce defects in the personality of the individual. That degenerative changes in the brain seldom if ever produce the psychopathic personality *after childhood or early adolescence* is best explained on the grounds that personality patterns of such individuals have already formed, and hence they are not easily influenced by such factors as trauma, infection, tumors, irradiation or nerve degeneration.

Having called attention to what seem to be the chief causes of the psychopathic personality—both hereditary and acquired—I can now go on to consider the possible seat of the trouble in the brain itself. I have already spoken of the centers in the cerebral hemisphere which have to do with making man what he is—the ruler over animate and inanimate things. All of these various centers are linked with other parts of the brain by means of association tracts. As far as the intellect is concerned, the prefrontal lobes, especially the left one in right-handed individuals, seem to be the ones which govern this particular phase of the mind. But man is not only an intelligent creature, but an emotional one as well. Apparently, this peculiar trait is associated with, and dependent upon, the normalcy of the thalamic and hypothalamic regions of the diencephalon. It therefore is held by some investigators that early change in these structures, associated with change in the convolution which lies just above the corpus callosum

on the mesial surface of the hemisphere, plus involvement of the frontal lobes—especially the part composed of orbital convolutions—is the cause of personality changes found in the delinquent and criminal psychopath. It is believed that factors which have an early effect upon the cerebral neurons and cells of these areas cause the arrest of personality development and give rise to that state of mind now under consideration.

When one comes to consider the symptoms that are present in this type of individual, he may find that the first inkling of trouble manifested itself during infancy or childhood. The child may have been late in walking, in talking or in acquiring nocturnal continence. These symptoms are by no means infrequent, and none of them is a sure forerunner of the psychopathic personality, but when they are later linked with other abnormalities of conduct such as temper rages, cruelty to animals or playmates, hatred of parents, conflict with teachers or other school authorities, unauthorized absences from school, lying when truth would better have served the purpose, stealing, obscene or profane language, aversion to mankind in general, and unprovoked running away from home, they serve as signals that possibly all may not be well, and should alert both physician and parents to the possibility that the child may develop a personality change at some future time.

Once the die has been cast, it seems there is nothing that can be done. Sooner or later, other symptoms occur which stamp the individual as a psychopathic personality. Among such symptoms is the absence of a feeling of guilt. Faced with the fact that he has committed a misdemeanor or a crime, the delinquent shows little or no remorse, as is attested by innumerable newspaper reports indicating that prisoners showed no emotion and seemed totally indifferent as judges pronounced sentences, even to the gallows, the chair, the firing squad or the gas chamber. Often, it seems, the individual has no regard for the consequences of his behavior. He seems to give consideration only to that which is at hand at the moment and, like St. John, "gives no heed for the morrow." Not infrequently, his wrongdoing is done on the spur of the moment, showing that impulsiveness is the trigger that fires something within to cause him to act thus. It may be that his judgment is insufficiently developed to deter him from wrongdoing, or he may lack discretion to the extent that he believes he has committed the perfect crime, thus outwitting the law and its scientific means for crime detection. He is the type of person who never seems to sense that crime does not pay.

Perhaps the greatest disappointment that comes to parents, other relatives and friends, and law-enforcement officers is the discovery that the individual does not profit from experience. Time after time, he promises to reform, to err no more,

to obey the moral and the statute law, only to find himself sooner or later again in the clutches of the police. He may seem to show some remorse, and may impress the court and others that he has been the victim of circumstances over which he has no control, and that he therefore should be allowed to have another chance. To our judges who have to do with juveniles, this is an old, old story. Of course there always is a chance that the particular individual facing the judge is really deserving of special treatment, but over the years the police and the judiciary have a tendency to become hard-hearted and cynical, as these juvenile delinquents repeatedly appear before them.

The juvenile who is so unfortunate as to be caught with a gang may not be a psychopathic personality. It is just too bad for him that he is caught associating with bad company. In such an event, his appearance before the court, his knowledge of the shame and grief he has brought upon his family, his consciousness of wrongdoing and its effect upon his own relationship to society—all of these are usually sufficient to deter him from further questionable acts. *This is the reaction of the normal individual.* Unfortunately, the psychopathic criminal and delinquent is devoid of those processes so necessary for the development of a normal personality, and he continues down the road which leads at last to the jail, the reformatory and the prison.

Much stress has been laid on the role of the broken home in the development of the psychopathic personality. Statistics indicate that it is a causative factor in many cases. However, before condemning the home environment as the cause, one should look to the parents who head the home, to see whether anything is wrong with either or both of them. Not infrequently, such a study will reveal that one or both parents show signs of psychopathic personality, and the real cause of the broken home—domestic turbulence—stems from this factor. Thus, the offspring may be a hereditary victim of the disease. The child of such a parent or parents is subject, in addition, to the dire effects of an unhappy and often tragic home environment which accelerates and intensifies the personality changes to which he has an inherited predisposition.

The unwanted child may feel the unwelcoming atmosphere of his home, and develop a hatred for the parent who made his conception possible or for the one who grudgingly gave him birth. If such a child is fortunate enough to lack the material out of which the psychopathic personality is made, he probably will develop nothing worse than a psychoneurotic disposition, and perhaps will escape delinquency and criminality altogether. At least there is hope for his recovery, since in his case the etiologic factors haven't been hereditary.

The child whose home has been broken is many times shifted from pillar to post, from parent to

parent, or from relative to relative. Eventually, perhaps, he is sent to an orphanage. Such moves are heartbreaking and are bad for a normal child to undergo, but usually he will outlive the storm and anchor at last in a peaceful harbor, where he will develop into a useful member of society. In other words, the broken home is not *per se* the cause of psychopathic delinquency, but it may produce delinquency.

It is said that King Solomon in his later years made the pronouncement, "With age comes wisdom." None of us who have achieved "three score years and ten" will contradict that observation. As for myself, I have long been convinced that longevity and normalcy are largely the products of a good hereditary background. In other words, it is the kind of wood from which an individual was hewn that really counts. The oak will outlive the storm to which trees of softer wood will succumb. Yet the hardy oak may become the victim of Thor's lightning bolt and never recover. So it is with man. He who comes into the world with a physical defect or a moral taint ordinarily will not outlast the individual who is well born and endowed with a good background. It is true that environment plays an important role in the life of man, but to my way of thinking, heredity plays an even greater role. The chromosomes and genes from which the individual springs are what really count.

CASE REPORTS

The following case reports show the psychopathic-personality background in individuals whom I examined and whose delinquency and criminality manifested itself in varying degrees.

Case 1, William G. K., was a white male, age 30, twice married and once divorced, who had begun a life of delinquency and crime prior to his teens. His offences ranged all the way from pilfering to burglary, robbery with aggravation and finally murder.

Apparently his father, an alcoholic, was a no-good individual who deserted his family when William was two years of age. In the course of time, his mother had married another man who, as a stepfather, was an even worse parent than the father. He too was an alcoholic, he was mean and cruel to his family, and eventually, after siring three children, he deserted the home.

Young William started on the road to delinquency as a lad, when he began to pilfer articles from trucks. He told his mother that he had found them in the street. Sometimes he worked alone; at other times he was a member of a gang. In time, he was caught and the doors of the reform school were about to open to him when he was paroled to a family who lived in an adjacent state. There, he had a splendid home, a wholesome environment and an opportunity to attend a county school. He

admitted that those were the happiest days of his life.

After finishing the eighth grade, he returned home. Disliking high school, he worked at various jobs and then joined the Navy following the outbreak of World War II. His stay in the service was short, for he went AWOL before finishing training. In time, he was apprehended and discharged from the Navy as an undesirable.

Thinking he might find some of his former happiness, he returned to the family with whom he had spent his parole days. Things seemed changed, however, and he soon returned to his home. He worked at various jobs, never holding one for any length of time, took unto himself a wife, but could not bring himself to settle down. Something within him seemed to urge him to "get up and go." Hence, he left his family for varying lengths of time, bumming his way about the country and continuing his light-fingered tactics.

When his wife divorced him, he left for parts unknown, traveling mostly in the West and the Southwest. His relatives knew nothing of his whereabouts for years at a time. However, he was busy at his trade, committing between 40 and 50 burglaries and armed robberies, according to his own subsequent admission. Sometime during that period, he married again.

He came into conflict with the Iowa law when he and his half-brother held up and robbed the attendants at two filling stations at gun point, and afterward shot and killed a farmer while attempting to rob his house. When they had been captured, both William and his half-brother confessed the crimes which culminated in the fatal shooting. The half-brother was sentenced to life imprisonment rather than execution, for he had no prior criminal record and had had an excellent record in the Korean War. William, the elder of the two and the instigator of the crimes that had led to the murder, was given a death sentence, since the judge could find no extenuating circumstances. In a retrial of the case, he was committed to prison for life.

This brief résumé of William's home and personal life brings into bold relief his psychopathic personality background. The broken home, a result of his father's alcoholism and irresponsibility, may have played a role in the boy's early delinquency. However, since his father's conduct may have been due to a psychopathic personality, William may have been afflicted with a bad heredity. His unhappy childhood, marked by poverty and mistreatment by his stepfather, seemed to have been the means that started him on the road to delinquency and crime. Pilfering and truancy, conflicts with the law, restlessness, inability to stick long at a job, indifference to his family and other obligations, the wanderlust spirit, his desertion from the Navy, his inability to profit from experience and to learn that crime does not pay, his

more or less complete lack of a feeling of guilt and lack of remorse—all these point conclusively to the diagnosis of psychopathic personality, but offer no legal excuse for his becoming a lawbreaker and murderer.

Case 2, John T. McF., a white male and an only child, 25 years of age and married, had been somewhat of a problem as a child and youth. His father had changed jobs frequently, sometimes walking out on his employer without notice, and was an alcoholic. When John was nine years old, his mother had divorced his father, and the boy was then cared for by either his maternal grandparents or his mother until his parents were again united some years later.

As a growing child, he had never got along well with his father. He was two years old before he began to talk, and he wet the bed until he was five years of age. He made fair grades in school and got along well with his teachers and classmates. He never developed any hobbies or had any special chums. His mother stated that he never took any responsibility when faced with problems, and that over the years she noticed he had a tendency to make a story bigger than the one he had heard related. She had thought at first that he had an unusual imagination, but as time passed she found she could put no confidence in his stories, for she could not tell when he was truthful and when he was lying. Sometimes, she found he had lied when truth would better have served his purpose. As a child, he never showed affection.

After graduating from high school, he became engaged to a student nurse and gave her a diamond ring. They expected to marry when she finished training. But then he joined the Air Force, where he served as a parachute test jumper. During that time, he became acquainted with a lady clerk in the air service and, after a few months' acquaintanceship, he married her. His mother and a friend came to the wedding, but John seemed indifferent to his mother's presence, showed no affection for her, and without apparent cause, ignored her. To the student nurse to whom he had been engaged, he gave no explanation for his change of mind.

After his discharge from the Air Force, he and his bride lived with his parents for a while. He took a job or two, but soon quit without apparent reason. He then moved to another town, where he worked for the Highway Commission. He held that job the longest of any. When vacation time came, he took his wife and child to visit her parents in one of the neighboring Midwestern states. During that visit and without giving notice to his employer that he was not coming back to work, he took a job driving a truck for a soft-drink concern. The employment was seasonal, and he soon found himself out of work. He then got a job as a bookkeeper for a car dealer. He was there but a short time until a shortage in cash was discovered,

and he was accused of being responsible for it. He steadfastly denied the charge, but suddenly left town, leaving his wife—an expectant mother—and his child. He passed through his home town without seeing his parents, and drove to the home of his grandmother in a neighboring town, where he forged her name on two checks. He then continued his journey to the West Coast. The automobile he drove was a mortgaged car, and since his payments on it were in arrears, the loan agency was anxious to repossess it. Nothing was heard from him for some time. Then, one day, his parents received a letter from him, posted on the West Coast, saying that he was coming home.

In the meantime, young John's creditors were hot on his trail. His parents paid his outstanding bills and paid the balance due on his mortgaged furniture. His grandmother made good his forged checks. There remained, of course, the car on which the mortgage was in default and the embezzlement charge in another state.

When the prodigal returned, he again denied taking money from his employer, and claimed he had left the automobile in a vacant lot adjacent to the bank which held the mortgage. When word came that the police on the West Coast had found the car, he boldly denied ever having driven it there, declaring that someone else must have taken it from the lot near the bank and driven it to its western destination.

When letters addressed in a strange feminine hand began coming to the house addressed to her son, the mother became greatly disturbed. Their contents revealed he had become "engaged" to a girl on the West Coast, and that she was anxious to know when he planned on coming back to marry her. He denied all knowledge of the writer, despite being confronted with the letters. Even after his mother had written to the girl, explaining her son's marital status, and after the girl had returned the high school ring he had given her, he steadfastly denied knowing her and how she came to have his ring.

He showed no concern about his wife and two children whom he had deserted, and he shrugged off his many fabrications and his forgeries. Rather, he thought only of himself. Suddenly, he enlisted in the regular Army for a term of three years.

This case reveals the possibility of a mildly psychopathic personality in the father, a lack of filial love and affection in the son, a home that was broken for several years, a lack of willingness to assume responsibility, an inability to work sustainably, an utter disregard of matrimonial obligations, a callous indifference to parents, pathological lying, forgery and possibly embezzlement. All of these factors point conclusively to the diagnosis of psychopathic personality.

Were I a gambler, I should wager that this man's stay in the Army will not make a man of him, and that the chance of his remaining in service for the

duration of his enlistment is exceedingly small. His ilk never learn that success in life comes from meeting one's own responsibilities, that crime does not pay and that lying never gets one anywhere.

Case 3, Terry M. P., a white male aged 17 and a senior in high school, was referred to me because of auto-eroticism. He had one sibling, a brother two years younger. There was nothing in the history to indicate any abnormal happening prior to, during or following his birth, except surgery for pyloric stenosis during infancy. His physical and mental development appeared to have been normal, and his associations in his home and at school gave no evidence of any abnormal tendencies.

When he was 11 years of age, he had worked as a caddy at one of the golf clubs. There, he came into contact with a group of boys, some of whom were sex minded, and as a result he began to masturbate. If his activity had been confined to this alone, no real censure could have been found for it, since it is well known that many youths, both male and female, adopt this practice with the coming of adolescence and its accompanying glandular stimulation. But for some as yet undiscovered reason he derived greatly enhanced satisfaction if he used a lady's undergarment made of silk or rayon in the performance of it.

The first intimation of what the boy was doing came when his mother discovered a pair of her panties hidden beneath the mattress of his bed. After promising to quit the practice, he left his mother's undergarments alone, but pilfered others from clotheslines as he walked his paper route. For a time, he used nylon stockings, but found that they did not give him the satisfaction which he had derived when he used panties.

The interesting point in this case concerns the satisfaction the boy attained. He integrates well with his classmates, frequently dates girls for school parties and other social events, and has given no indication of wanting heterosexual relations on either a voluntary or a forceful basis. But he does show the earmarks of psychopathic personality, for it is only an individual of that type who develops a pathological sexuality of the kind that he portrays. Will this kind of carrying-on cease when the time for proper heterosexual relations arrives, or will it persist as a result of a fixation of his personality at an immature level? Perhaps its continuance will result someday in some serious sex offence. Until these questions are answered, I feel that the sword of Damocles is hanging over this youth and his family. Thus, the boy needs sympathetic but careful attention.

So far, in this discussion of the psychopathic delinquent and criminal, I have pointed out that we are dealing with individuals who, through no fault of their own, have a slanted or blunted moral sense, or none at all. These are various degrees of the same thing—amorality. I think it is apparent

why so little can be accomplished in the way of treatment. To prevent disease is far more important than to treat disease and its sequelae. But the psychopathic delinquent seems to have an immoral trait ingrained in his being; hence, the difficulty in treatment.

In my opinion, there is nothing that can be accomplished in the way of treatment of those cases which are the result of bad heredity. The etiologic factor is in the warp and woof of the individual's make-up, and not even the wisest of us can make a brain cell develop or a neuron function properly if it is inherently defective. Such nerve protoplasm is damaged goods, and unless Divine miracles start occurring once again, I see no hope for the restoration of such an individual.

In this connection, I am reminded of a remark made by a noted Philadelphia neurologist: "When you are cracking nuts and come across one with a hole in it, why waste time and energy to crack it? You won't find anything inside." So it is with these unfortunates who, because of bad heredity or a misfortune during the early developmental period of life, become the possessors of brain changes that result in the psychopathic personality state. For them, science and medical knowledge have no specific remedy to offer at the present time.

In making this statement, I may seem to be heartlessly closing the door on these individuals who are greatly to be pitied, and removing all hope for their future. I am not so bold as to say that something can be done to make such individuals whole again, but I do maintain that something can be done to keep at least some people from developing this state.

If it is true that many of these cases stem from acquired etiologic factors such as trauma and infection which involve the developing brain, then the physician can understand his great responsibility to the expectant mother and the unborn child. The obstetrician will be conscious of his responsibility to the child as it passes through the birth canal, and will remember that brain cells, if deprived of oxygen, may be forever damaged. Likewise, the pediatrician must redouble his efforts to see that the infant and child is kept as free from infections—both germ and virus—and from fever as it is humanly possible to keep him. The roentgenologist will be most careful if he is called upon to x-ray the pregnant womb or the head of an infant or child. The neurosurgeon, in treating head injuries, will also consider his responsibility in caring for those of his patients who have not yet reached, or are just reaching, the adolescent state. These are the fields in which preventive medicine may be of help. As for brain tumors and degenerative diseases of the brain, medicine has nothing to offer in the way of prevention.

Now comes the \$64,000 question: What are we to do with these unwanted misfits of society. The cor-

rect answer is what the world is waiting for. Broken promises, broken paroles, a term in reform school, incarceration in jail, time in the men's reformatory or in the state penitentiary—these mark the trail which these confirmed delinquents and criminals cut out for themselves. For the dangerous criminal, the homicidal criminal and the murderer, detention behind prison walls is safest—safest not only for society but for the criminal himself. It is true that many times such an individual is the chief troublemaker among prisoners and a headache for those charged with his care. Hence, it is not unreasonable to believe that some wardens are anxious to get rid of such troublemakers and to shift responsibility for them to someone else. It is at this point that the parole board may find that the buck has been passed to it.

On the other hand, the teen-ager who persists in going from bad to worse is not a suitable candidate for the reformatory or the penitentiary. Though his crime may merit his being put into such an institution, his companions there will enhance his criminalistic tendencies and make him a more proficient lawbreaker by the time that he is paroled.

It is my belief that when society has had enough of dilly-dallying with the youthful criminal and sex offender, it will demand that a special institution be created in which to house and care for him. There, he will associate only with his kind. There, individual attention can be given to his specific problem. The staff will consist of medical men who have been trained in the management of mental disorders and who will look upon the

prisoner not as a criminal but as a mentally sick individual. Iowa already has four institutions where the insane are cared for. It also has institutions for the deaf, the blind, the feeble-minded and the epileptics. Why not another one for the psychopathic delinquent and criminal?

A few years ago, the State Legislature authorized the commitment of sex offenders to the state hospital for the insane at Mt. Pleasant. But here again, in my opinion, it is wrong to mix these psychopathic delinquents with persons who are insane or recovering from an attack of insanity. Though he may not actually mingle with the insane, yet the delinquent individual cannot help being aware that he is in a mental institution, and therefore is apt to resent the implication that he is "crazy" like the other inmates. The sex offender is not insane in the true sense of the word, and though it is perhaps preferable to have him in an environment where there are no hardened criminals, still in the last analysis it is my belief that he will receive no appreciable benefit other than custodial care in a mental hospital. This is readily understandable, for the underlying cause of his trouble is entirely different from that which produces a true psychosis or insanity.

I therefore see no reason why it is illogical to add to our state institutions another one where these psychopathic delinquents, criminals or sex offenders can be isolated from the world, and by means of which society can be spared the heartaches and tragedies that so often result from our permitting such folk to roam at will. I probably shall not live to see that day, but I predict its coming.

Superior Mesenteric Artery Occlusion During Pregnancy

Resection of 17 Feet 7 Inches of Intestine

H. LLOYD MILLER, M.D., R. Y. NETOLICKY, M.D., AND J. E. WALKER, M.D.

CEDAR RAPIDS

ABDOMINAL EMERGENCIES during pregnancy, due to disease other than in the pelvic organs, are extremely rare. In our own experience of caring for over 7,000 pregnant women, these emergencies have been limited to three cases of acute appendicitis and one case of bowel obstruction due to carcinoma of the colon. Only one case of mesenteric occlusion during pregnancy has previously been reported, and that occurred during labor.¹

In the majority of cases, cardiovascular disease or recent abdominal surgery have been the conditions most frequently associated with mesenteric vascular occlusion.² The mortality rate still remains quite high in this disease (80 per cent or more), probably because of the disparity between the clinical findings and the seriousness of the pathology. This is especially true of patients in whom the onset of the symptoms is slow.

Many of the reports have failed to mention the exact amount of bowel resected. Such subtitles as "Massive Small Bowel Resection With Recovery"³ are quite common.

We believe the case to be presented establishes a world's record as far as the amount of bowel resected is concerned, and also that it is unique in that the patient was pregnant at the time the resection was done.⁴

This recent experience of ours is being presented in order to alert other physicians to the possibility of this formidable problem even in pregnancy and also to show what extensive abdominal surgery can be performed without disrupting a pregnancy.

CASE REPORT

A 24-year-old housewife, Gravida III, Para II with an expectant date of April 22, 1958, was hospitalized on January 13, 1958, with a presumptive diagnosis of acute cholecystitis. Her past history was negative except for two normal spontaneous deliveries. Her present illness had begun on January 11, two days prior to the admission date, with general malaise, nausea and vomiting of bile-stained material. At the onset, she thought she had an attack of the always-popular "intestinal flu," and didn't bother calling her obstetrician. On the next day, January 12, the symptoms persisted, with the addition of generalized abdominal pain, which was quite dull in nature. She also noted the development of a watery diarrhea with no evidence of blood. On the next day, January 13, the symptoms continued, and there was a cramp-like pain in the right upper quadrant. She was hospitalized at that time, although she regarded her symptoms as not severe and thought hospitalization unnecessary. She said she had been unable to eat fried or fatty foods and cabbage for some time, because they caused considerable abdominal discomfort and flatus.

Interesting, in view of the subsequent surgical findings, was the patient's having been involved in an automobile accident approximately one month prior to her present illness, with the development of similar symptoms of less severity.

On physical examination at 10:00 a.m. on the day of admission, the patient had a temperature of 98°F., a pulse of 72, respirations 18 per minute, and a blood pressure of 110/75 mm. Hg. The abdomen was enlarged with the pregnant uterus of about 5½ months' gestation. There was tenderness and a questionable mass in the right upper quadrant—the gallbladder area. The patient was obviously in pain, but did not appear seriously ill. The remainder of the physical examination was essentially normal.

The urine was normal, and the white blood cell count was 32,000, with a marked shift to the left. The hemoglobin was 11.7 Gm., and the red blood cell count was 3,800,000 per cu. mm.

She was given 75 mg. of Demerol and in-

travenous fluids. She had another hypo of Demerol (75 mg.) later on the same day. She actually complained very little, and when she was seen at 5:30 p.m., she was sitting up in bed talking with her roommate. The examination of the abdomen at that time revealed some distention above the uterus and a definite mass in the gallbladder area. She had not vomited since admission, nor had there been any stools. She was told at that time that a surgeon would be in to see her soon, and that she quite possibly would need a cholecystectomy.

The surgeon (Dr. R. Y. Netolicky) saw her two hours later, at 7:30 p.m. When he entered the room, he found the patient in shock, with blood pressure unobtainable and with a heart rate of 148 and weak. Dextran was immediately started, and it caused the pressure to rise to 80/? mm. Hg. During the next 30 to 45 minutes, the patient received 500 cc. of whole blood, and the blood pressure rose to 110/72 mm. Hg., with a pulse of 104 beats per minute. The abdomen had become markedly distended and tympanic, and there was rebound tenderness over the gallbladder area. A Levine tube returned brownish-red material, a finding that probably should have given us a clue to the pathology. The patient was questioned as to why she hadn't called a nurse prior to the surgeon's entrance. She answered that she was an R.N. herself and hated to bother anyone. Yet, she must have been in severe pain before going into shock. She was taken to the operating room with a presumptive diagnosis of acute cholecystitis with perforation of the gallbladder.

At surgery, the patient was found to have a congenital malrotation of the bowel, though it evidently had at this time tried to rotate to a normal position. The condition had caused occlusion of the superior mesenteric artery, and the bowel was gangrenous from the middle third of the duodenum to the distal portion of the transverse colon. A total of 17 ft. 7 in. of bowel were removed—including 16 ft. 6 in. of small intestine and 1 ft. 1 in. of large bowel. The entire section was reported as gangrenous by the pathologist. The remaining portion of the duodenum was anastomosed to the remaining transverse colon. The pregnancy was not disturbed. An active fetus could be detected by observation and palpation of the uterus during surgery. The operation was completed in 45 minutes, and the patient left the operating room in grave condition. The blood pressure was 100/60, and the pulse was weak and thready. The patient received two units of whole blood prior to and during the operation. Three more units were given on the second and fourth postoperative days.

The postoperative treatment consisted of continuous Wangenstein suction and daily intravenous fluids. The fluids consisted of 1,000 cc. of Amigen with 12.5 per cent glucose, 1,000 cc. of 5 per cent glucose in normal saline solution, and

1,000 cc. of 10 per cent glucose in water. Vitamins, 20 mg. of potassium chloride, and antibiotics (500 mg. of Tetracycline) were added to the intravenous fluids daily. Vi-Syneral (2 cc., intramuscularly) was also given daily.

The patient progressed very well, and on the eighth postoperative day the Levine drainage and the intravenous solutions were discontinued. Electrolytes, red blood cell count, hemoglobin and proteins were checked at three-day intervals. The patient began multiple feedings of Sustagen, skimmed milk and Cream-o-Wheat. The stools ranged from two to nine in 24 hours, and were brown to yellow and of a syrupy or pasty consistency.

This patient has an average weight of 100 lbs. She weighed 107 lbs. prior to surgery. On the thirteenth postoperative day, she weighed 94 lbs. Her hemoglobin was 11.7 Gm. before surgery, 8.7 Gm. on the first postoperative day, and 10.8 Gm. on the fifth. On the twelfth postoperative day, there was a decrease in CO_2 combining power, and the patient was given M/6 sodium lactate intravenously for the correction of this condition. There were no other disturbances in electrolytes or chemistry.

On the twenty-second postoperative day, the patient was discharged. At that time she was on a diet of multiple feedings of Sustagen, milk, eggs, toast, Jello, custard, broth and milk shakes. In addition, she began taking Di-cal D with Feso 4 caps (1 t.i.d.), and continued with Vi-Syneral (2 cc. intramuscularly, twice weekly).

Throughout the rest of her pregnancy, the electrolytes remained excellent, and the hemoglobin increased to 13.1 Gm., which showed remarkable absorption of the iron. The stools remained about the same, ranging from two to six daily. The fetus remained active, and apparently grew normally. There were few complaints during pregnancy, but the weight dropped to 82½ lbs. Occasionally the patient reported some vomiting.

On April 27, the baby was born spontaneously after a labor of 4¾ hours. The infant weighed 5 lbs 10 oz., and seemed normal. However at this time, four months after delivery, the pediatrician is suspicious either of some brain damage or possibly of a microcephalic baby. Its weight at four months of age is over 10 lbs. The mother had an uneventful postpartum recovery, and was discharged on the sixth postpartum day, weighing 72 lbs. and seeming very happy.

On June 19, the patient was referred to the metabolism clinic at University Hospitals, Iowa City, complaining of weakness and seeming very depressed. Her weight had dropped to 65 lbs.

She is now at home, and her prognosis is that she probably can keep going indefinitely, but will need to have very special attention whenever she has diarrhea from any cause.

SUMMARY AND CONCLUSIONS

1. Mesenteric infarction can occur without a history of cardiovascular disease, although most patients do have this condition prior to the infarction.⁵

2. The brownish-red fluid returned by the Levine tube just before surgery should have suggested the diagnosis.

3. In recent years, we have heard a great deal about psychosomatic medicine. Certainly if the mind can have a strong influence in causing various diseases, it can also have an effect upon the cure.

The patient on whom we have reported here has always had a tremendous desire to live. She has expressed this feeling at different times, and this attitude has impressed all of the physicians who have cared for her.

At the present time, she is being studied in the metabolism clinic at the S.U.I. College of Medicine.

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THE MECHANISM OF NITROGEN MUSTARD THERAPY

At the meeting of the Federation of American Societies for Experimental Biology, in Atlantic City on April 15, three researchers from the University of Illinois, Drs. Harris Busch, Samir M. Amer, and William L. Nyhan, reported finding that aminouracil mustard has a marked effect on the intake and use of certain proteins for nourishment by the cancer cell. They found it effective in shutting off protein nourishment to the nucleus of the cancer cell by as much as 50 per cent, compared to cancer cells not exposed to the chemical. This, they said, would uphold the theory that aminouracil and the other mustards tend to starve cancer cells to death, but they warned that additional years of probing may be necessary before the reasons for this inhibiting effect can be determined.

In another report at the same meeting, Dr. Joseph R. Davis, of the University of Illinois, and Dr. Busch told of isolating an abnormal radioactive protein from two strains of cancer cells in rats. They emphasized, however, that they have not as yet identified that protein and that the same protein may not be found in human cancer patients.

Their long-range objective is to find a way of depriving cancer cells of the particular protein or proteins that are essential to their life and growth.

Meigs' Syndrome

A Report of One Case

JOHN A. CAFFREY, M.D., AND JOE G. FELLOWS, M.D.

AMES

MEIGS' SYNDROME, a condition characterized by ascities, hydrothorax, and a benign ovarian fibroma or benign fibroma-like tumor, can be cured by removing the tumor. Such cases are relatively uncommon, but they deserve to be reported in order to remind physicians of this very important, curable condition.

CLINICAL HISTORY

The patient, a 52-year-old white woman, was a gravida II para I whose last menstrual period had occurred two years before she was first seen, by J. F., on May 14, 1958. Her chief complaint was an infectious rash involving the nose and arms. Her general examination was negative except for the rash and a large pelvic mass, which was uniform, movable and firm, and midline in position. The adnexae were negative. The mass was thought to be a large leiomyomatous uterus. Her weight was 186½ lbs., and her height was 5 ft. 7½ in. The rash was treated with a local antibiotic ointment, and she was placed on a 1,000-calorie diet and appetite depressants.

She was followed up every two or three weeks, and her weight uniformly diminished and the rash disappeared. On November 19, 1958, her weight was 149½ lbs., or 37 lbs. less than at her first examination. A reexamination of the pelvis was more satisfactory as a result of the loss of weight. The mass could then be palpated abdominally as well

as bimanually, and the initial findings were confirmed. The patient's general health was good, and there was no clinical evidence of hydrothorax or ascites. Surgery was advised.

OPERATIVE FINDINGS

The patient was admitted to Mary Greeley Memorial Hospital, in Ames, on December 18, 1958. On the following day, under general anesthesia, the abdomen was opened via a midline vertical incision from subumbilicus to suprapubis. As the peritoneum was opened, a clear, straw-colored fluid gushed forth. Suction was applied as soon as possible, and 4,000 cc. of it was collected. An estimated 1,500 cc. was lost on the drapes. When the intestines could be packed away, a large, whitish firm tumor presented itself. It was in the midline, but was attached by a pedicle at the point where the right ovary would normally be found. This pedicle was clamped and ligated, and the tumor was removed. The left ovary was normal, and so was the uterus except for a small (2 cm.) intermural fibroid on the fundus. The abdomen was closed in the usual manner.

DESCRIPTION OF THE TUMOR

The tumor weighed 825 Gm. and measured 15 x 12 x 9.5 cm. It was greyish-white, firm and smooth. On cross section, the fibroid nature of the tumor was very evident. There were small cystic areas present (Figure 1).

The pathologic diagnosis given by Dr. R. F.



Figure 1A. Gross tumor.



Figure 1B. Sectioned tumor.



Figure 2A. Hydrothorax, left pleural cavity, December 24, 1958.

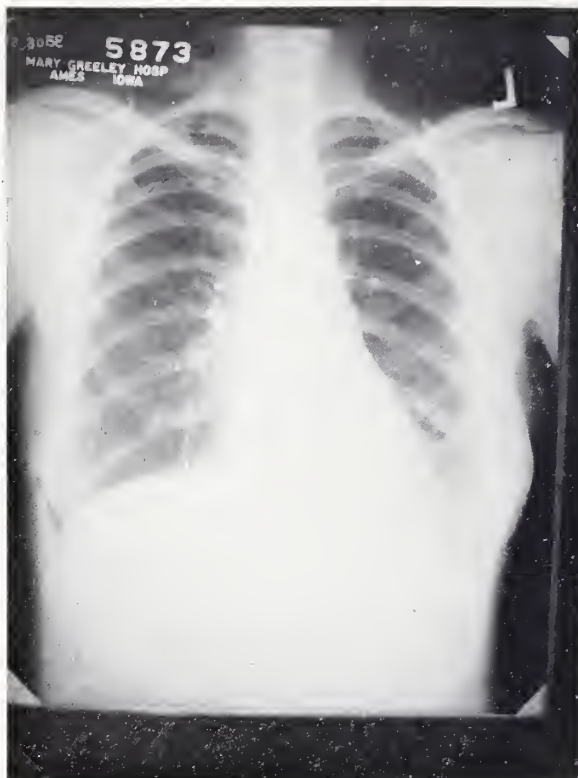


Figure 2B. Complete resolution, December 30, 1958.

Birge, a Des Moines pathologist, was "Ovarian Fibroma, right."

POSTOPERATIVE COURSE

The patient did well postoperatively, except for a mild adynamic ileus which was relieved by gastric intubation and suction, with intravenous fluid and electrolyte replacement.

An x-ray of the chest on December 24 revealed fluid in the left pleural cavity, but a repeat x-ray on December 30 showed complete resolution of the hydrothorax.

The patient was dismissed on December 30, 1958, the eleventh postoperative day. An examination on January 19, 1959, revealed her to be asymptomatic. Her weight was 135 lbs., and a chest x-ray again was normal.

CLINICAL SUMMARY

In retrospect, it is evident that this case exhibited all of the typical characteristics of Meigs' syndrome: (1) ascites, (2) hydrothorax, (3) benign ovarian fibroma, and (4) cure after removal.

HISTORY OF MEIGS' SYNDROME

In 1937, Meigs and Cass reported seven cases of ovarian fibroma associated with hydrothorax and ascites.¹ Theirs was the first extensive report on the subject. Prior writings by Demons, a French

physician, in 1887, 1900, 1902 and 1903, had discussed the findings of fluid in the abdomen and chest with ovarian cysts.² Later in 1937, Rhoads and Terrell reported a case with the characteristic findings, and urged that this combination of pathologic features be termed "Meigs' syndrome."³ Sporadically, further cases have been reported in the literature, but Meigs has done the most extensive work on the subject. In 1939, he again reported on the syndrome and summarized 15 cases.⁴ The most extensive article on the subject is the one that Meigs published in 1954. Drawing from all the English reports and much of the foreign literature, he accepted 84 cases as exhibiting the true syndrome. He made a plea for confining the designation to cases that fulfill the original criteria, i.e., (1) ascites, (2) hydrothorax, (3) benign ovarian fibroma or fibroma-like (thecoma or granulosa cell) tumor, and (4) cure after removal of the tumor.⁵

ORIGIN AND ROUTE OF THE ASCITES AND HYDROTHORAX

Much discussion can be found in the literature regarding the origin and route of the fluid. The most generally accepted theory is that the tumor releases the fluid through the surface lymphatics. It has been shown that if one places the tumor in a container after the pedicle has been ligated, fluid accumulates. Lawson reported on a 4½ lb.

fibroma removed from a woman with Meigs' syndrome, saying, "Although the vessels of the pedicle had been ligated, some 500 ml. of brownish fluid exuded from the tumour within 24 hours."⁶

The flow of fluid is believed to be from the abdomen to the chest. Particulate matter has been injected into the peritoneal cavity and recovered after a few hours from the pleural cavity.⁷ Similar observations have been made with the use of radioactive gold.⁸ Attempts to reverse the route have been unsuccessful. It has been presumed that the fluid flows from the peritoneal cavity through the subdiaphragmatic lymphatics into the supradiaphragmatic lymphatics and thus into the pleural cavity.⁹

IMPORTANCE OF THE SYNDROME

When making a differential diagnosis in a female patient with ascites and hydrothorax, one must carefully consider cardiac, hepatic, renal and other diseases, but must not forget the possibility of a benign ovarian fibroma or a fibroma-like tumor. In the literature, there is a report of a patient who was found to have a very small fibroma (3 x 2.5 x 2 cm.). It was removed, and the patient was cured.¹⁰ This instance emphasizes the importance of taking a thorough history and making a careful physical examination, as well as being aware of the possibility of Meigs' syndrome. Also, if a tumor

is found along with the ascites and hydrothorax, surgery should be done even if the patient is a poor operative risk for there is a strong possibility that she can thus be cured.

SUMMARY

1. A report of one case of Meigs' syndrome has been presented.
2. The history of the syndrome has been reviewed.
3. The origin and route of the fluid have been discussed.
4. The importance of recognizing this syndrome has been discussed.

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State University of Iowa College of Medicine Clinical Pathologic Conference

SUMMARY OF CLINICAL FINDINGS

FOUR MONTHS PRIOR to death, an 85-year-old retired farmer was admitted to University Hospitals because of hematuria. He was seen in the Department of Urology, and the diagnosis was benign prostatic hypertrophy, large bladder calculus and bilateral hydronephrosis. The bladder stone was removed suprapubically. Because of anemia, five blood transfusions were given. The patient had an uneventful postoperative course and was discharged with a suprapubic tube for drainage of the bladder.

The patient returned seven weeks prior to death, and a transurethral prostatic resection was done. Pathologic study of the removed tissue showed benign prostatic hyperplasia. His recovery following this operation was uneventful. The suprapubic catheter was removed, and the sinus healed promptly. The patient voided well, and his bladder emptied satisfactorily. He was discharged five weeks prior to death on Kynex, 0.5 Gm. daily for one week.

He returned to the hospital two weeks prior to

death, after being jaundiced for five days, vomiting for one day and showing blood in the urine. Anorexia had developed 12 days prior to this admission, and he had had an occasional vague abdominal pain apparently unrelated to meals. He complained of no fatty food intolerance. During the 48 hours immediately prior to admission, he had had three episodes of vomiting.

Physical examination revealed an elderly man deeply jaundiced but in no acute distress. The blood pressure was 120/90 mm. Hg., the respirations were 16/min., and the pulse was 84/min. and regular. The sclerae were yellow. The chest was resonant and the breath sounds were normal. The heart was normal in size, there was a regular sinus rhythm and no cardiac murmurs were heard. The abdomen was rounded. There was moderate tenderness in the right upper quadrant of the abdomen, and the liver edge was felt just slightly below the costal margin. The spleen was not palpable. On rectal examination, the prostate gland was slightly enlarged and smooth. Stool present in the rectum was brown. There were no purpuric

areas in the skin. Spiders were searched for, but none were found. The patient had no fever, and didn't appear severely or acutely ill.

The results of laboratory tests done during the patient's first two hospital days were as follows: hemoglobin 13 Gm.; white blood cell count 8,100/cu. mm.; prothrombin time 32.0 sec. (control 15.2 sec.). The urine specific gravity was 1.018, and the urine was negative for albumin, sugar and blood. It was positive for bile, and negative for urobilinogen. A stool examined in the laboratory on the second hospital day was described as being white in color and negative for blood. The one minute van den Bergh was 10.5 mg./100 cc., and the 30 minute van den Bergh was 22.0 mg./100 cc. The total serum protein was 7.1 Gm./100 cc., with an albumin of 3.1 and a globulin of 4.0. The alkaline phosphatase was 3.4 Bodansky units, whereas the normal is 0-4 units. The zinc turbidity was 15.0 units, as opposed to a normal of 2-8 units. The cephalin flocculation was 4+ at 24 hours and 4+ at 48 hours.

On the patient's third hospital day, he had an episode of shock, and his blood pressure dropped as low as 60/40 mm. Hg. A gastric tube was passed, and suction on this tube withdrew 600 cc. of bloody material from the stomach. The patient was treated with intravenous fluids, including 250 cc. of plasma and 1,000 cc. of whole blood.

On the fourth hospital day, the patient's blood pressure was 140/90. He felt much better, and there was no evidence of shock. A GI series was done, revealing that his stomach had smooth, pliable walls, active peristalsis and no evidence of ulcer niche. The duodenal bulb and first portion of the duodenal loop were slightly dilated at times. However, the duodenal bulb contracted well, and the barium passed readily through the entire duodenal loop. The late film showed no gastric retention. The radiologic impression was intrinsically normal stomach and duodenal bulb.

On this same day, the hemoglobin was 12.9 Gm., the white blood cell count was 7,800, the bleeding time was 4 min., the coagulation time was 6 min., the platelet count was 153,000, and the prothrombin time was 22.5 sec., with a control of 15.8 sec. The patient was seen by a surgical consultant. He told that physician that his appetite was improving and that in general he was better than he had been on admission. Physical examination confirmed the findings of the initial physical examination. The surgical impression was hepatocellular disease with jaundice, but the patient was transferred to the surgical ward.

On the seventh hospital day, the patient appeared weaker and sleepier. A repeat GI series showed normal stomach and bulb. The following laboratory examinations were done. A serum glutamic oxaloacetic transaminase was 420 S-F units, the normal range being 0-50 units. A repeat transaminase was 620 units. A BUN was

15 mg./100 cc., and a creatinine was 1.6 mg./100 cc. A one-minute serum van den Bergh was 14.5 mg./100 cc., and a 30-minute van den Bergh was 33.5 mg./100 cc. Serum lipase was 0.29 units, and serum amylase 39 units. The normal values for lipase are 0.5 to 2.0 units, and for serum amylase 50-150 units. A mid-morning fingertip blood sugar was 88 mg./100 cc. Thymol turbidity was 11.5 units.

By the ninth hospital day, the patient was disoriented at times, and he had repeated retching without vomiting. On that day a stool examination was negative for bile and strongly positive for blood. On the tenth hospital day, the blood ammonium was 192 micrograms per 100 cc. Normal values range between 10 and 70 micrograms per 100 cc. The patient continued to get weaker. He became less responsive and had to be given intravenous fluids daily. The jaundice deepened, and he died on the fifteenth hospital day.

SUMMARY OF CLINICAL DISCUSSION

Dr. E. E. Mason, Surgery: This is a problem that every surgeon has some qualms about. He does not want to operate if the disease isn't surgical, and yet he doesn't want to miss a common duct stone. We have asked Dr. Merle Musselman, chairman of the Department of Surgery at the University of Nebraska, to discuss this case and to tell us how he would solve this problem.

Dr. Merle Musselman, chairman, Department of Surgery, University of Nebraska College of Medicine: This patient first came to the hospital because of hematuria, and his admission took place four months before his death. He was treated by suprapubic removal of a bladder stone. The patient had no petechiae or purpura at that time, and the absence of those signs was good evidence that his hematuria was from infection or erosion, rather than from a blood dyscrasia. He had five blood transfusions. Any patient who has had a blood transfusion and subsequently becomes jaundiced must be suspected of having homologous serum jaundice. I think of the incubation time for viral hepatitis as two to four weeks, and that for homologous serum jaundice as between two and four months. In this case, sufficient time had elapsed for homologous serum jaundice to develop. The patient recovered and was discharged.

Two months before his death, the patient returned to the hospital. He had a transurethral prostatic resection for benign prostatic hypertrophy. He was discharged on Kynex. We have no information that he was given any other medication that might have resulted in jaundice from a toxic hepatitis.

Two weeks before his death, he returned to the hospital again, and gave a history of anorexia for 12 days, jaundice for five days and vomiting for one day. He had vague abdominal pain of no great consequence. He had had blood in the urine. The

physical examination was not remarkable except for deep jaundice. It was noted that he had a tenderness over a normal-sized liver, and the spleen was not palpable. His having no purpura suggests that he had no bleeding tendency at the time of admission. Also, spider nevi were not found. Spider nevi may result from increased circulating estrogens which cause dilatation or growth of vessels. Estrogens may be increased in liver disease because the liver cannot conjugate them as it should. I doubt that this man could have had liver disease long enough for this interesting phenomenon to have occurred. Of all these considerations, the jaundice was the significant finding.

Primarily, I must try to determine the cause for the jaundice in this man. I find it of practical importance to determine whether a jaundiced patient has bile in the urine. For if he has no bile in the urine, he has *acholuric jaundice*. Only hemolytic jaundice is acholuric. We are told that this patient had bile in the urine, and thus he didn't have hemolytic jaundice. I must then try to determine whether he had "medical" or hepatocellular jaundice, or whether he had "surgical" or obstructive jaundice.

If this man had hepatocellular disease, I think it was acute rather than chronic hepatitis. I cannot believe that this 85-year-old man had cirrhosis, for he had had no evidence of cirrhosis on his previous admissions. And if this 85-year-old man had acute hepatitis, I would suspect that it was homologous serum jaundice. Incidentally, homologous serum jaundice is an occupational disease among surgeons. We acquire it from a patient when we stick a finger, and judging from the numbers of gloves we puncture, we must stick our fingers more frequently than we appreciate. Any surgeon who hasn't had infectious hepatitis stands a good chance of getting it.

This patient might have had obstructive jaundice from a common duct stone or from carcinoma of the pancreas or biliary tract. Classically, we think of jaundice from common duct stone as painful, and jaundice from carcinoma as painless. Actually, common duct stones may be "silent" and biliary obstruction from carcinoma may be painful. I think of carcinoma of the head of the pancreas as painful in half the patients, and common duct stones as "silent" in half the patients. I want to emphasize that the absence of pain doesn't rule out the possibility of common duct stone.

We are told in one paragraph that the stool was brown, but in the next paragraph that it was "white." Since no urobilinogen was found in the urine, I should have to assume that no bile was reaching the gut and the stool must have been "white." Thus, complete biliary obstruction or severe liver disease is indicated.

On the third hospital day, the patient had an episode of shock, and his blood pressure dropped to as low as 60/40 mm. Hg. I am pleased that a

gastric tube was passed and the cause of the shock promptly demonstrated by aspirating blood from the stomach. In surgical patients, the first thing to think of as a cause for shock is hypovolemia, either from blood loss or fluid loss.

The second most common cause of shock in surgical patients is infection. Gram negative bacteremia produces shock that is dramatic, both in the profound nature of the shock and in the suddenness with which it can occur. It can occur after a blood transfusion, in the presence of cellulitis, or after an operation—often a minor procedure such as cystoscopy or even catheterization of the bladder. Coronary occlusion or thromboembolism also may result in shock. Such causes may easily be overlooked. The prevalence of treating shock with adrenal corticosteroids suggests that adrenal exhaustion is much more frequent than I think it to be. Capillary resistance is a good test for adrenal function. To evaluate its usefulness as a clinical tool, we tested capillary resistance in our patients before and after surgery. In about two years of testing, we found no surgical patients with decreased adrenal function, either by the test for capillary resistance or other tests. We found other adequate explanations for all cases of shock that had occurred during this period. Corticosteroids should be among the last things thought of in the treatment of shock, not the first.

While I am on the subject of shock, I want to question the use of vasopressors in shock. I suggest that one should give consideration to the evidence that vasoconstricting agents may aggravate shock. In animals subjected to experimental shock, at least, evidence has been presented that vasoconstrictors increase the mortality and vasorelaxants reduce the mortality. So as, partially, to neutralize the generally favorable regard in which vasoconstrictors are held, I am taking the stand that they should not be used in shock. Certainly patients in shock need blood, not vasoconstrictors. If we use vasoconstrictors, we are treating the symptoms of shock, not correcting the basic cause. I cannot accept the notion that vasoconstrictors should be used until blood can be obtained. I prefer serum albumin, saline solution, plasma and plasma expanders. Elevating the foot of the bed and applying compression bandages to the extremities are other measures that can be used. Finally, at death conferences, I frequently hear it said, "The patient was given vasopressors and cortisone, but he died in spite of them."

At the time of the bleeding episode on the third hospital day, the patient's direct bilirubin was 10.5 and his indirect 22, suggesting a greater element of hepatocellular disease, possibly basic hepatocellular disease. The relatively normal alkaline phosphatase also would support basically hepatocellular disease. As I mentioned before, the urine was positive for bile and negative for urobilinogen. The elevated prothrombin time was further evidence of liver disease. I wouldn't expect

a prothrombin time of twice the control to result in hemorrhage.

On his fourth hospital day, this man had a bleeding time and a clotting time done. I ask why these were ordered. What do they indicate if they are abnormal? An increased bleeding time means essentially one thing—a deficiency of platelets. Yet, we are told that this man had no purpura and had a normal platelet count. Of course, his bleeding time was normal.

An increased clotting time means essentially one thing—hemophilia. Yet it is hardly conceivable that this patient could have lived 85 years with hemophilia without his condition's becoming known.

I think these tests too often are ordered thoughtlessly. Bleeding and clotting times are determined routinely before some operations, particularly tonsillectomies, but have you ever wondered why they aren't determined before a mastectomy? I have thought the routine determination of bleeding and clotting times unnecessary, and I was happy recently to find support for my position in the J.A.M.A. "Questions and Answers" department. The bleeding and clotting times are less important than the history and the physical examination. They may actually mislead one by being relatively normal in the presence of a coagulation defect. If hemorrhagic disease is suspected from the history and the physical, more refined hematologic tests are indicated.

In this case, I would relate the bleeding from the urinary tract and from the stomach to the patient's liver disease. It is possible that uremia might have accounted for the bleeding. What was the NPN on this patient?

Dr. George N. Bedell, Internal Medicine: It was normal until a few days before death, and then it was elevated. The BUN was 15 on the seventh hospital day.

Dr. Musselman: Also, on the fourth hospital day, the prothrombin time was increased, but not so much as the day before. Was that after vitamin-K had been administered?

Dr. Bedell: No, vitamin-K was not given.

Dr. Musselman: If the prothrombin time had returned to normal within 24 hours after the administration of vitamin-K, it would have indicated good liver function.

Also, a GI series was done on the fourth hospital day. This should be done in patients with upper gastrointestinal hemorrhage. I hope to demonstrate the site and the cause of the bleeding. I am anxious to have Dr. Gillies present these x-rays and to comment on the following. I think no patient is harmed by having an upper GI series in the presence of upper gastrointestinal hemorrhage. Of course, he shouldn't be moved to x-ray until he has been resuscitated and stabilized. Precise arrangements should be made so that the patient can be examined and returned

to his room without delay. I think the radiologist can carry out his usual routine examination. I don't believe he can change the pattern of bleeding by palpation and manipulation of the patient. Many of these patients re-bleed. Some of them re-bleed while in x-ray; others in their rooms. It is a misconception to associate re-bleeding with the x-ray examination simply because re-bleeding occurred in the x-ray department or shortly after the patient left there.

Dr. Carl L. Gillies, Radiology: The gastrointestinal examination that we did on this patient was entirely negative.

We have no hesitation about doing this examination on a bleeding patient who is stabilized. There was a time when we weren't so confident, but I don't know of an instance when a patient has been made worse as a result of such a procedure. I'll admit that we are much more careful than we would be with a patient who wasn't bleeding. We try to have things prepared so that the patient can be seen right away and can be returned promptly after the examination has been completed.

This patient also had an intravenous pyelogram that showed mild dilatation of pelves and calyces. A cystourethrogram showed a mild enlargement of the prostate. We were also able to demonstrate a large vesical calculus that may have accounted for some of his bleeding on his original visit. He had a suprapubic cystostomy, with removal of the stone. An intravenous pyelogram taken following the cystostomy was entirely normal. That is to say, the mild dilatation of the pelves and calyces was no longer present.

Dr. Musselman: Now I have a couple of questions. A little later on in the protocol we find that the patient had a reversal in the A-G ratio suggesting hyperglobulinemia. Multiple myeloma is one cause for hyperglobulinemia. Multiple myeloma might have affected his bone marrow and accounted for his bleeding. Did he have any bony lesions suggesting multiple myeloma?

Dr. Gillies: No, we had a film of his chest, and there was no evidence of myeloma.

Dr. Musselman: Was there no evidence of any other bony disease? I'm thinking particularly of metastasis that might affect his bone marrow.

Dr. Gillies: No.

Dr. Musselman: My last question, then. It is noted on my sheet that there was no air in the biliary tree, and no calculi were seen. I wonder why the comment about air in the biliary tree was made.

Dr. Gillies: I don't know why it was made.

Dr. Musselman: What is suggested by the presence of air in the biliary tree?

Dr. Gillies: Ordinarily, it means that there is a fistula between the biliary system and the gastrointestinal tract.

Dr. Musselman: I would think of this ordinarily in connection with so-called gallstone ileus. Gall-

stone ileus may be suspected in the older person who has intermittent mild episodes suggesting intestinal obstruction and finally absolute intestinal obstruction.

Apropos of gallstone ileus, I might mention that the other day a resident told me he thought a patient's difficulty should be so diagnosed, and when I asked him for his reasons, he said that he didn't hear any bowel sounds. But *ileus* doesn't mean paralysis. It simply means obstruction. Ileus may be dynamic or adynamic. I assure you that gallstone ileus is not adynamic. It is a mechanical obstruction with hyperperistalsis.

We now come to the serum transaminase. This is a helpful new tool that we have. When elevated, it indicates cell death or necrobiosis, as against the lack of cell death or necrobiosis. In biliary tract obstruction, we may get an elevation of the transaminase, particularly if we have an associated infectious process or ascending cholangitis. I did find some interesting facts as I prepared for this presentation. I found out that there is a glutamic pyruvic transaminase or GPT, and that there is also a glutamic oxaloacetic transaminase or GOT. The glutamic pyruvic transaminase is said to be higher in obstructive jaundice, and the glutamic oxaloacetic transaminase is higher in medical jaundice. This patient had a transaminase of 420 and later of 620. As far as I know, this is just about borderline. In obstructive jaundice, it may rise this high. In infectious jaundice, this might be considered the lower limits of normal.

The serum bilirubin was repeated, and the findings were very similar to those found previously, suggesting hepatocellular disease. Serum lipase and serum amylase were normal. The thymol turbidity of 11.5 and the reversal of the A-G ratio also indicated impaired liver function. I would have expected the alkaline phosphatase to be higher in obstructive jaundice. The cephalin flocculation was 4+. That would have made up my mind. This patient had severe liver disease and was no candidate for an operation. In general, a cephalin flocculation of 2+ makes me begin to worry considerably about how a patient will stand an anesthetic—let alone how he will stand an operation!

I think that the medical department was absolutely correct in its impression that the jaundice might be on the basis of a stone in the common duct or a carcinoma of the head of the pancreas. It certainly might have been. Often we can be sure of the diagnosis only by operation or autopsy. After the bleeding episode on the fourth hospital day, carcinoma of the stomach was entertained as a possibility, but not supported by x-ray. On the fifth hospital day, the patient was seen by a surgical consultant who thought the jaundice was probably on the basis of hepatitis. I agree, and I think the patient had homologous serum jaundice. I think the rest of the story is

one of progressive liver failure from a fulminating and catastrophic hepatitis.

DR. MERLE MUSSLEMAN'S DIAGNOSIS

Homologous serum hepatitis

CLINICAL DIAGNOSIS

Homologous serum hepatitis

PATHOLOGICAL DIAGNOSES

Viral hepatitis, acute severe

Acute pancreatitis, severe

Hyperplasia of prostate (post-transurethral resection)

Diverticula of urinary bladder

Renal calculi, left

Senile pulmonary emphysema with terminal pulmonary collapse, congestion and mild acute bronchopneumonia

Generalized atherosclerosis, with healed amputation of right leg and mild renal changes.

Dr. John R. Carter, Pathology: The significant finding at autopsy was a viral hepatitis of an acute and subacute variety. It was a florid, fulminating process that was somewhat short of the so-called acute yellow atrophy. In addition, there was beginning post-hepatitic cirrhosis. There was no extrahepatic obstruction. The gallbladder was of normal size and it contained bile, but there was a very mild chronic inflammatory reaction in the wall. Jaundice and minimal ascites and hydrothorax were present. The liver weighed 850 Gm., which is approximately half the normal weight of the liver. Thus, there was a tremendous decrease in liver mass which apparently had occurred rather rapidly. This finding bears out the usual observation that the more fulminating the hepatitis, the more likely one is to observe a striking decrease in liver mass ultimately.

Grossly, the liver was finely nodular. The fine nodularity was due to the presence of fibrous tissue causing some distortion of the liver architecture, but was not due to the presence of large numbers of regenerating liver lobules. In short, what liver tissue was present was essentially normal liver parenchyma, rather than regenerating liver tissue. The patient also had an acute but non-hemorrhagic pancreatitis. This, likewise, was a fulminating process that was associated with rather severe fat necrosis involving not only the fat of the pancreas but of the omentum also. The ducts of the pancreas were patent. Hyperplasia of the prostate gland was observed, and evidence of post-transurethral resection was apparent. Diverticula of the urinary bladder were also observed, with an associated cystitis and renal calculi on the left. Bile plugs were present in the kidneys, but no significant degree of cholemic nephrosis was observed microscopically. There was no significant damage to the renal tubular epithelium, although at the time of autopsy there

was a slight increase both in the BUN and in the creatinine. Senile pulmonary emphysema with terminal pulmonary collapse, mild congestion and minimal bronchopneumonia were observed. Atherosclerotic changes were present in the majority of the major vessels, but the atherosclerotic process was not severe.

In the slides of the liver, one could see cords of liver cells that were from the remaining liver parenchyma, rather than derived from regenerating nodules. Proliferation of bile ducts was a conspicuous feature. There were numerous chronic inflammatory cells, particularly in the portal areas. The absence of lipid in the cells was a particularly conspicuous feature. It is one that is commonly observed in viral hepatitis. The absence of fat was in striking contrast to the fatty metamorphosis of nutritional cirrhosis. In the portal areas, one could observe proliferating bile ducts, numerous inflammatory cells consisting predominantly of lymphocytes and plasma cells with a sprinkling of monocytes, and interestingly enough, a number of eosinophils. Eosinophilia in the triadal exudate is a rather common finding in this form of hepatitis. In some areas one could see so-called balloon cells with large nuclei and prominent nucleoli. This too is a rather conspicuous feature of viral hepatitis. Increased mitotic activity on the part of the liver cells was present. Other slides showed the diffuse fibrillary character of the proliferating fibrous tissue separating the proliferating bile ducts. The arrangement of the fibrous tissue is fairly characteristic in this particular stage of hepatitis. It was not dense and compact as it would have become in later stages of the process. Bile plugs in the bile canaliculi were particularly conspicuous in many areas of the liver. Intrahepatic biliary obstruction is, of course, a very conspicuous feature of viral hepatitis. The laboratory findings relating to bilirubin and urobilinogen can be explained and correlated with the intrahepatic biliary obstruction in this case.

It was apparent from the slides of the pancreas that large areas of fat necrosis with beginning calcium soap formation and inflammatory reaction was present. There was no evidence of hemorrhage in the pancreatic tissue, indicating that the vessels had not been digested, to a significant degree at least, by trypsin. The pancreatitis was of fairly recent vintage, and it might very well have become hemorrhagic had the patient lived longer.

As far as the clinical pathologic correlation is concerned, the signs and symptoms as well as the cause of death may be attributed to the severe liver damage, with intrahepatic obstruction. With this severe degree of liver damage, a striking decrease in prothrombin was expected and did occur, and the hemorrhagic diathesis can be explained on that basis. It is quite probable that there was a deficiency in more than one blood-

clotting factor. Unfortunately, the patient was not studied in the coagulation laboratory, and consequently we don't know about such possible deficiencies in this case. However, on the basis of rather extensive coagulation studies on patients with liver disease, it would seem likely that the patient had a deficiency of factor VII and possibly a lesser extent of deficiency of factor V, both of which are accelerator factors, together with a deficiency of prothrombin and possibly even a deficiency of fibrinogen. I mention these other factors to emphasize one important point, namely that the one-stage prothrombin tests will measure a deficiency of each of the above-mentioned factors. It is not just an indication of prothrombin alone. Generally, the factor VII level is most sensitive of all. A fibrinolysin, not uncommonly present in liver disease, might also have been present in this case.

It would seem pertinent to discuss for a moment the time sequences in this disease process. From a general point of view, it is fair to say that the pathologic criteria for the various forms of liver disease of the inflammatory type are in a somewhat nebulous state. There are significant differences of opinion among the so-called experts. This particular case, it is thought, does fall rather well into a category of subacute viral hepatitis. Whether it is basically a homologous serum jaundice or a true infectious hepatitis, we cannot state from the autopsy material, since the pathologic changes in the two conditions are identical. This case doesn't fit into the category of acute yellow atrophy in the sense that no massive areas of necrosis or hemorrhage were present. There were areas of necrosis, but they were made up largely of individual cells rather than of the massive coagulation necrosis that one sometimes sees in the much more florid cases. Associated with these areas of necrosis, the eosinophilic bodies, or Mallory bodies, were quite conspicuous. From the histological and gross appearance—and particularly in view of the fact that there were few, if any, regenerating lobules, and since the liver weighed 850 Gm.—it was felt that the least amount of time that could have produced this change was approximately five weeks, but it might well have been two or three months. There was not a great deal of fibrous tissue present. In any event, it would appear that the inflammatory process in the liver had, in fact, preceded the clinical manifestations. This is not an uncommon observation.

The pathogenesis of the pancreatitis cannot be stated with certainty. Pancreatitis has occasionally been observed in patients with cirrhosis or with hepatitis. The acute process observed in this case was more severe, perhaps, than is ordinarily seen in inflammatory liver disease, but minor degrees of fat necrosis and chronic pancreatitis are not at all unusual. There was no obstruction to

the duct system such as that which Opie reported finding in 18 per cent of his cases. It is much more likely that the pancreatitis was associated with the same virus that produced the hepatitis, but of this, of course, we have no proof.

In conclusion, I concur with Dr. Musselman regarding the clotting time, and in addition I might point out that in our coagulation laboratory approximately 50 per cent of our mild to moderately-severe hemophiliacs have been shown by the usual methods to have normal coagulation times.

Dr. Musselman: I might touch on the pancreatic aspect of this case. I'm glad this patient didn't have any stones in the common duct, for as far as I'm concerned, this theory is greatly overworked. The danger with it is that it closes our minds to other possibilities. As a matter of fact, I think most of us agree that there probably are more than one cause for pancreatitis. The pancreas, like other exocrine glands like the parotid and the liver, is susceptible to viral infections. This association between viral hepatitis and pancreatitis is common knowledge. This suggests that the patient had a viral pancreatitis also. In that connection, do you know that there is a very serious disease in trout—epidemic viral pancreatitis—that causes trout-breeders all kinds of trouble? Once

it gets started in the fingerling trout being raised for us to catch, it can wipe out a great number. It is purely and simply a viral disease that has a special affinity for the pancreas. Remember that pancreatitis is sometimes a complication of mumps and of viral hepatitis, and that it can occur in trout as a specific viral infection.

Dr. Mason: Dr. Eckhardt, can we rely on a 4+ cephalin flocculation test as a sign of liver disease?

Dr. Richard D. Eckhardt, Department of Medicine: I hope Dr. Musselman never lets the laboratory run a cephalin flocculation on him, for he might be shocked at the result. Given a large group of apparently normal individuals, not infrequently a 2+ and even an occasional 3+ individual will crop up. Since the cephalin cholesterol flocculation merely records abnormalities of the serum proteins, an abnormal (positive) test doesn't necessarily point to a severe underlying disease of the liver *per se*. Furthermore, I don't believe that the degree of abnormality of this test correlates at all well with the gravity of the liver disease that may be present. Although this is a very valuable test, caution must be exercised in its interpretation.

Dr. Musselman: For me, that observation simply reinforces the adage: "If the laboratory work fits, fine; if it doesn't, ignore it."

Coming Meetings

In State			
June 11-13	SUI Medical Alumni Reunion.	Iowa City	
Out of State			
June 1-3	International College of Surgeons, German Section.	Hamburg, Germany	
June 1-3	Gallbladder Surgery.	Cook County Graduate School of Medicine, Chicago	
June 1-4	American Dermatological Association.	Claridge Hotel, Atlantic City	
June 1-5	Pediatric Surgery.	Cook County Graduate School of Medicine, Chicago	
June 1-5	Physiological Basis of Clinical Electrocardiography.	N.Y.U., N.Y.C.	
June 1-5	Psychiatry for the Internist (American College of Physicians).	Psychiatric Institute, University of Maryland Hospital, Baltimore	
June 1-5	Practical Pediatric Hematology (Children's Hospital of Philadelphia and the Graduate School of Medicine, University of Pennsylvania).	University of Pennsylvania, Philadelphia	
June 1-5	Surgery of the Colon and Rectum.	Cook County Graduate School of Medicine, Chicago	
June 1-6	International Hospital Congress.	Edinburgh, Scotland	
June 1-12	Surgical Technic.	Cook County Graduate School of Medicine, Chicago	
June 2-5	Annual Meeting, Western Branch, American Public Health Association.	Sheraton-Palace Hotel, San Francisco	
June 2-6	American Rheumatism Association.	Mayflower Hotel, Washington, D. C.	
June 2-6	Pan-American Congress on Rheumatic Diseases.	Washington, D. C.	
June 3-7	American College of Chest Physicians, Silver Anniversary Meeting.	Ambassador Hotel, Atlantic City	
June 4	Gastroenterology Research Group.	Claridge Hotel, Atlantic City	
June 4-5	American Geriatrics Society.	Hotel Traymore, Atlantic City	
June 4-6	Seventh Annual Meeting, Canadian Association of Physical Medicine and Rehabilitation.	Lord Nelson Hotel, Halifax, N.S.	
June 4-6	Endocrine Society.	Chalfonte-Haddon Hall, Atlantic City	
June 4-6	Surgery of Hernia.	Cook County Graduate School of Medicine, Chicago	
June 4-7	American Medical Women's Association.	Sheraton Ritz Carlton Hotel, Atlantic City	
June 4-7	American Therapeutic Society.	Shelburne Hotel, Atlantic City	
June 5-6	American Gastroenterological Association.	Claridge Hotel, Atlantic City	
June 5-6	Fetal Electrocardiography.	U.C.L.A., Los Angeles	
June 5-7	American College of Angiology, World Conference on Angiology.	Marlborough Blenheim Hotel, Atlantic City	
June 6	American Academy of Tuberculosis Physicians.	Atlantic City	
June 6	International Cardiovascular Society, North American Chapter.	Hotel Shelbourne, Atlantic City	
June 6-7	American Diabetes Association.	Chalfonte-Haddon Hall, Atlantic City	
June 6-7	Society for Investigative Dermatology.	Ritz Carlton Sheraton Hotel, Atlantic City	
June 7-13	Third World Congress, International Fertility Association.	Amsterdam, Netherlands	

- June 8-12 Annual Meeting, American Medical Association. Traymore Hotel, Atlantic City
- June 8-12 Association for Research in Ophthalmology, Inc. Atlantic City
- June 8-12 Vaginal Approach to Pelvic Surgery. Cook County Graduate School of Medicine, Chicago
- June 8-19 Symposium on Modern Therapeutics in Internal Medicine. N.Y.U., N.Y.C.
- June 8-26 Forty-Fourth Session, Trudeau School of Tuberculosis and Other Pulmonary Diseases. Saranac Lake, New York
- June 9-11 Canadian Federation of Biological Societies (Canadian Physiological Society, Pharmacological Society of Canada, Canadian Association of Anatomists, Canadian Biochemical Society). University of Toronto, Toronto
- June 9-12 Congress & International Exhibit of Technicians of Health. Parc des Expositions, Porte de Versailles, Paris, France
- June 9-12 Femoral Arteriography. Cook County Graduate School of Medicine, Chicago
- June 9-18 Second Summer Institute on Medical Teaching (University of Buffalo and the Association of American Medical Colleges). Buffalo
- June 10 Surgery—Herniae. University of Oklahoma Medical Center, Oklahoma City
- June 11-14 American Electroencephalographic Society. Claridge Hotel, Atlantic City
- June 11-14 Wyoming State Medical Association. Jackson Lake Lodge, Moran
- June 12-14 Joint Council to Improve Health Care of the Aged. Sheraton Park Hotel, Washington, D.C.
- June 13-14 Society of Biological Psychiatry. Claridge Hotel, Atlantic City
- June 14-17 Idaho State Medical Association. Sun Valley
- June 15-17 American Neurological Association. Claridge Hotel, Atlantic City
- June 15-17 Gynecology for General Physicians. University of Minnesota, Minneapolis
- June 15-17 Hypnosis. U.C.L.A., Los Angeles
- June 15-18 American Proctologic Society. Shelburne Hotel, Atlantic City
- June 15-19 General Surgery. Cook County Graduate School of Medicine, Chicago
- June 15-19 Medical Library Association. King Edward-Sheraton Hotel, Toronto, Canada
- June 15-19 Special Topics in Internal Medicine (American College of Physicians). University of Colorado Medical Center, Denver
- June 15-26 Diagnostic X-Ray. Cook County Graduate School of Medicine, Chicago
- June 15-26 Fractures and Traumatic Surgery. Cook County Graduate School of Medicine, Chicago
- June 15-26 Office and Operative Gynecology. Cook County Graduate School of Medicine, Chicago
- June 15-26 Surgical Technic. Cook County Graduate School of Medicine, Chicago
- June 16-18 American Orthopedic Association. Lake Placid Club, Lake Placid, New York
- June 17 Office Urology. U.C.L.A., Los Angeles
- June 17-19 Advanced Technics and Application of Hypnosis. U.C.L.A., Los Angeles
- June 17-20 Pediatrics. University of California, San Francisco
- June 18 Surgical Technic Utilizing the Isolated Intestinal Segment in Urological procedures. U.C.L.A., Los Angeles
- June 18-20 Sixth Annual Meeting, Society of Nuclear Medicine. Palmer House, Chicago
- June 19-21 International College of Surgeons, French Section. Lyons, France
- June 20-23 Annual Meeting, South Dakota State Medical Association. Rapid City
- June 20-24 Pacific Northwest Obstetrical and Gynecological Association. Banff Springs Hotel, Banff, Alberta, Canada
- June 21-23 Maine Medical Association. The Samoset, Rockland, Maine
- June 21-23 American Physical Therapy Association. Hotel Leamington, Minneapolis
- June 22-23 Management of Chronic Kidney Disease. N.Y.U., N.Y.C.
- June 22-26 Advanced Electrocardiography. Cook County Graduate School of Medicine, Chicago
- June 22-26 Blood Vessel Surgery. Cook County Graduate School of Medicine, Chicago
- June 22-26 Clinical Gastroenterology. N.Y.U., N.Y.C.
- June 22-26 Internal Medicine; Selected Topics (American College of Physicians). University of Cincinnati College of Medicine, Cincinnati
- June 22-27 Clinical Hematology. University of Colorado Medical Center, Denver
- June 23-24 Dissection of the Thorax, Abdomen and Pelvis. U.C.L.A., Los Angeles
- June 24-25 Management of Hypertension. N.Y.U., N.Y.C.
- June 25-26 Dissection of the Extremities. U.C.L.A., Los Angeles
- June 24-27 International Conference on Medical Electronics. UNESCO Building, Paris, France
- June 26-28 Intermountain Pediatric Society. Sun Valley, Idaho
- June 27-28 Hand Surgery. U.C.L.A., Los Angeles
- June 28-July 23 Seventeenth Annual Session, Summer School of Alcohol Studies of the Laboratory of Applied Biodynamics, Yale University, New Haven
- June 29-July 3 Irish Medical Association. Killarney
- July 3-5 Fourth Congress, International Union of the Medical Press. Cologne, Germany
- July 4-9 American Society of X-ray Technicians. Shirley Savoy Hotel, Denver
- July 5-7 Impact of Surgery on Anesthesia. U.C.L.A., Los Angeles
- July 6-8 Obstetrics and Gynecology. University of Colorado Medical Center, Denver
- July 6-8 Third International Congress of School and University Health. Paris, France
- July 6-9 Ophthalmology (University of Colorado Medical Center.) Aspen, Colorado
- July 12-17 International Congress on Plastic Surgery (British Association of Plastic Surgeons). London, England
- July 15 American Society of Facial Plastic Surgery. New York City
- July 16-17 Oregon Cancer Conference (Oregon State Medical Society, Oregon Division of the American Cancer Society, University of Oregon Medical School and the Oregon Academy of General Practice). Library Auditorium, University of Oregon Medical School, Portland
- July 16-18 Dermatology. University of Colorado Medical Center, Denver
- July 18-24 British Medical Association. Edinburgh, Scotland
- July 19-25 Ninth International Congress of Pediatrics. Montreal
- July 20-24 Pacific Northwest Obstetrical and Gynecological Association. Banff, Alberta
- July 22-23 Rocky Mountain Cancer Conference. Brown Palace Hotel, Denver
- July 23-30 International Congress of Radiology. Munich, Germany
- July 24-25 Infertility. U.C.L.A., Los Angeles
- July 26-30 International Psychoanalytical Association. Copenhagen
- July 27-31 First International Medical Conference on Mental Retardation. Eastland Hotel, Portland, Maine
- July 27-31 Shaio Foundation Symposium on Cardiovascular Disease. Hotel Tequendama, Bogota, Colombia
- July 29-Aug. 15 Second Annual Postgraduate Refresher Course, University of Southern California School of Medicine. On board *The SS Lurline* and in Honolulu



PHYSICAL THERAPISTS

Rehabilitation programs have achieved a deserved prominence nationally during the past few years, and here in Iowa competent staffs have been assembled and facilities built for all phases of that sort of work, notably at the S.U.I. College of Medicine (see the April, 1959, issue of this JOURNAL), and at the Younker Memorial Center of Iowa Methodist Hospital, in Des Moines.

We believe that physicians throughout the state, and particularly those who plan the scientific programs of their county medical societies, should take time off from their work to tour one or the other of those institutions and to discover at first hand what benefits the physiatrists and the paramedical therapists who work under their direction can provide to patients recovering from acute debilitating diseases, or afflicted with chronic crippling conditions.

Having done so, county medical society program chairmen will want, we think, to devote one of their meetings next fall or winter to the subject of rehabilitation, and to have a physiatrist or a physical therapist as the guest speaker. Such an arrangement could be made to coincide with the local clinic of the State Services for Crippled Children.

Physiatrists, probably, are medical specialists to whom doctors throughout the state need no introduction, but physical therapists are a group of men and women whose qualifications many be less generally known. Though their training has been less rigorous and prolonged than that of doctors of medicine, they are well-educated people of great skill, and their dedication to their work is thoroughly professional. Under the supervision of physicians, they can do a great deal for patients, and they deserve to be carefully distinguished from people who have less training but profess to do the same work.

The American Physical Therapy Association was founded in 1921 by a group of 220 World War I reconstruction aides as the American Women's Therapeutic Association. The name of the organization was changed, first to the American Physiotherapy Association in 1922, and then to the American Physical Therapy Association in 1948. At present there are chapters in all 50 states, in Puerto

Rico and in the District of Columbia, and the membership totals approximately 8,600.

There also is an American Registry of Physical Therapists, for which individuals with either of two sorts of training are eligible: (1) those who have completed a four-year course of study leading to the Bachelor of Science degree in physical therapy; and (2) those who have completed a certificate program requiring between 10 and 16 months of intensive study for which, with certain exceptions, a B.A. or a B.S. degree is the prerequisite. In either program, clinical practice under supervision is required prior to certification. The Registry administers an examination to those who have completed one or the other of the above training programs, and at present there are 7,000 registrants. The Association and the Registry have set up a strict code of ethics.

Of the 38 schools of physical therapy, most of them closely associated with approved medical schools, the nearest are those at S.U.I., at the University of Kansas Medical Center, at the Mayo Clinic, at the University of Minnesota, at Northwestern University, at St. Louis and at Washington Universities, at Marquette University and at the University of Wisconsin. The Iowa Chapter of the Association has published a directory listing all of the qualified physical therapists in the state, and doctors who wish to have copies can secure them from the Chapter president, Mr. Joseph A. Szuhay, 2316 Wayne Avenue, Iowa City. In addition to the Iowa members of the American Physical Therapy Association, the directory includes the individuals who are on the registry but not in the Association.

DR. L. A. COFFIN MEMORIAL FUND

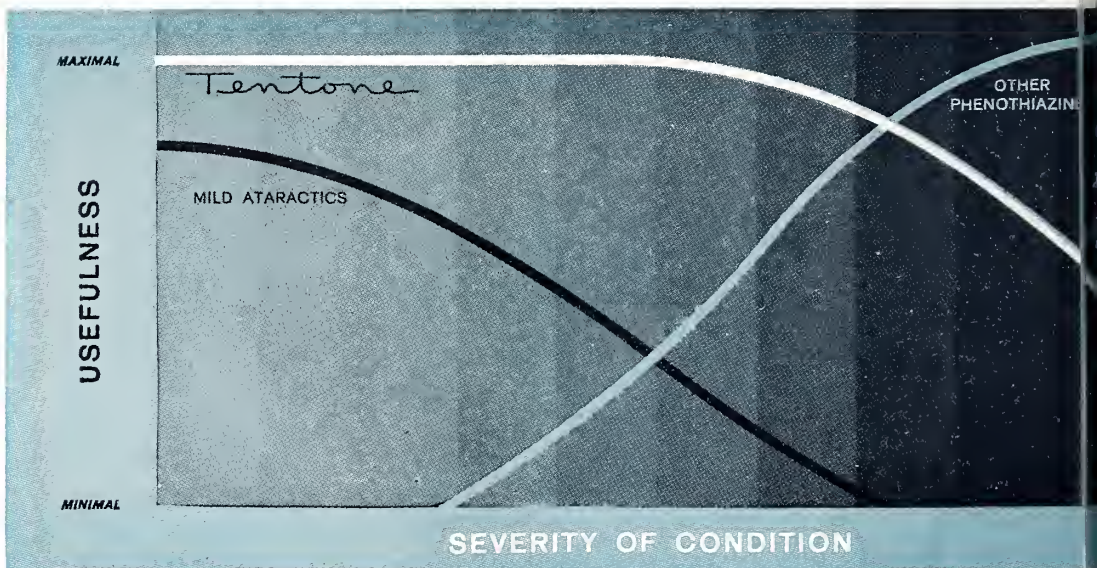
To perpetuate the memory of the first Iowan to be chosen by the AMA as its General Practitioner of the Year, a number of his friends have thought it particularly appropriate to establish a fund in his name from which loans can be made to medical students who offer some assurance that they will enter the general practice of medicine. As this is written, the contributions have reached approximately \$400.

Inasmuch as Dr. Coffin was one of the founders of the Educational Loan Fund of the Iowa State Medical Society, it seemed obvious that he would have liked to be remembered through contributions to it. Thus, the Dr. L. A. Coffin Memorial Fund is to be administered by the officers of the Educational Loan Fund, and the rules governing disbursements and repayments are to be identical for the two, with the single exception that has been mentioned.

Those who wish to make gifts to this establishment should draw their checks to the Dr. L. A. Coffin Memorial Fund and send them to the office of the State Medical Society, in Des Moines.

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HYPERTENSION AND UNILATERAL KIDNEY DISEASE

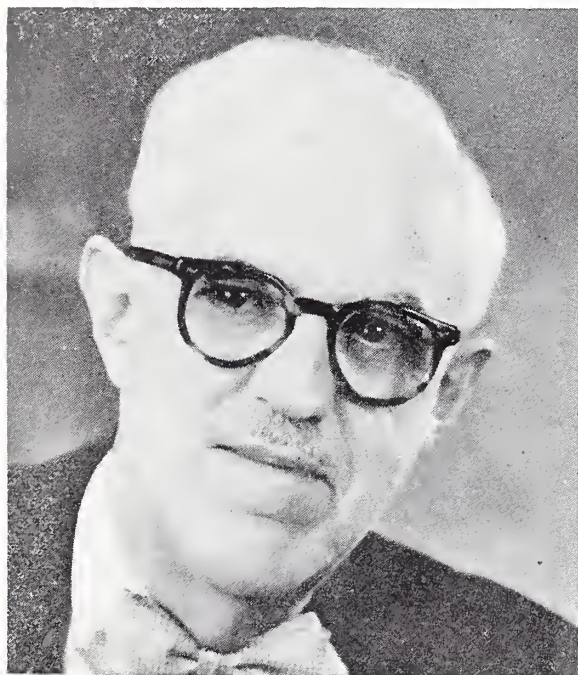
Although the precise relationship of essential hypertension to kidney disease has not been established, there is general agreement today that disease of one kidney may cause arterial hypertension in man which is entirely reversible by appropriate therapy. In reviewing the many uncritical and enthusiastic reports which appeared after Goldblatt's demonstration of the relationship between renal ischemia and hypertension in animals, it is not surprising that 20 years elapsed before the careful physician could be certain that such a state existed in man. Although this important point has been settled with reasonable assurance, many problems exist concerning the genesis, incidence, diagnosis and treatment of hypertension caused by unilateral renal disease.

In experimental animals, it is known that a pressor substance, angiotensin, can be isolated from normal and ischemic renal tissue. Renin, a proteolytic enzyme, acts on a globulin substrate in the plasma to form angiotensin, the structure of which has been determined. Angiotensin has been synthesized. This material is thought to be present in the acute stage of several types of hypertension in man, and has been assumed to be responsible for the hypertension associated with unilateral

kidney disease. Connor, Berthrong, Thomas and Howard¹ have described lesions in the diseased kidneys of patients responding to nephrectomy which they believe are characteristic of unilateral kidney disease with hypertension and which may be the site of production of the pressor substance or its precursor. These areas had atrophy of the cortical parenchyma involving chiefly the tubules and sparing the glomeruli. Associated with the atrophy were small tubular acini in the atrophic areas and small lumens lined by altered cuboidal cells that were thought to be characteristic of "ischemic atrophy."

The incidence of unilateral kidney disease among hypertensives has been said to be from one to six per cent. With the diagnostic methods used in the past, no more than 25 to 35 per cent of patients with hypertension and a preponderance of disease in one kidney were relieved of their hypertension by nephrectomy or corrective surgery when followed for one year or longer. The majority of those patients having successful operations had parenchymal kidney lesions from chronic pyelonephritis. The remaining ones had primary vascular lesions such as aneurysms, congenital anomalies, fibrous bands, emboli or atherosclerotic plaque formations in the renal artery. Unilateral kidney disease with hypertension has been reported after ischemia of a portion of one kidney had

AWARD RECIPIENTS



During the State Medical Society's Annual Banquet, on April 21, an Award of Merit was presented to Dr. Ben T. Whitaker, of Boone (left), for "outstanding service to organized medicine." Dr. Whitaker, a radiologist, served as president of the Society in 1952-1953, was instrumental in the founding of Iowa Medical Service (Blue Shield), and currently is the Society's representative on the board of Hospital Service, Inc. (Des Moines Blue Cross).

Mr. Edwin M. Kingery (right), who for 29 years has been executive secretary of the Polk County Medical Society, in Des Moines, was given the John F. Sanford Award, an honor that is named for the chief founder of the State Medical Society and is presented to laymen who have done outstanding services for organized medicine.

developed from vascular lesions in small arteries of the kidney.

Although milder forms of hypertension may be seen with unilateral kidney disease, most patients present with accelerated or malignant hypertension. Thus, Perera and Haelig² have pointed out that the disease often starts abruptly and runs a severe and rapid course, with high diastolic pressures and signs of necrotizing arteriolitis. Others have been impressed by the heavy proteinuria and at times polyuria demonstrated by these patients. The disease is more likely before the age of 20 or after the age of 50 years. When the diagnosis is suspected, it often can be supported by certain diagnostic procedures. Intravenous pyelograms sometimes will demonstrate a smaller kidney shadow on one side than on the other. The Howard test, a differential kidney function test done by bilateral ureteral catheterization, has been helpful occasionally. In this test, a diminished volume of urine, together with a lower concentration of sodium in the urine from the abnormal kidney, suggests a favorable result from nephrectomy. This procedure is difficult to standardize, and both false negative and false positive results have been described. Visualization of the renal parenchyma by aortography done by the translumbar or percutaneous femoral technic is probably the most dependable single procedure for demonstrating renal arterial abnormalities. This examination, however, has a significant morbidity, primarily because high concentrations of the contrast medium get into the vascular beds. For this reason, some physicians don't use it routinely when screening for unilateral kidney disease. More recently, the measurement of the accumulation of I¹³¹-tagged Diodrast[®] in the kidneys has been developed as an index of renal blood flow. Other radioactive labels also have been used for this purpose. At the moment, technical problems prevent these tests from being satisfactory. There is hope, however, that eventually they may provide a simple and safe means of detecting significant differences in blood flow to the two kidneys or to portions of them.

There is a pressing need for better methods of predicting which patients will benefit from nephrectomy or corrective surgery if we are to avoid the many mistakes made in the early 1940's. However, by intelligent appraisal of the patient's history and physical examination and by proper interpretation of the newer diagnostic aids available, one now can select a higher percentage of hypertensive patients with unilateral kidney disease who will benefit from surgical treatment than ever before. Definitive therapy at the present time is controversial only when segments of kidneys are affected or when the lesion is a vascular one which may be corrected by blood vessel repair or by shunting procedures.

Because this disease represents a form of curable hypertension, it has received an inordinate

amount of attention from clinical investigators. Although the syndrome is not common, the practitioner who knows its characteristics can avoid overlooking it completely or advocating unnecessary kidney surgery.

REFERENCES

1. Connor, T. B., Berthrong, M., Thomas, W. C., and Howard, J. E.: Hypertension due to unilateral renal disease—with report on functional test helpful in diagnosis. *Bull. Johns Hopkins Hosp.*, **100**:241-276. (June) 1957.
2. Perera, G. A., and Haelig, A. W.: Clinical characteristics of hypertension associated with unilateral renal disease. *Circulation*, **6**:549-552, (Oct.) 1952.

GENERAL PRACTITIONER OF THE YEAR



Dr. William B. Chase

Dr. William B. Chase, of Des Moines, was named the ISMS General Practitioner of the Year by the House of Delegates at its final session on April 22.

Dr. Chase began practice in Prairie City, a few miles east of Des Moines, in 1902, and moved to the city 18 years later. When other physicians from throughout the area were called to serve the Armed Forces in World War I, Dr. Chase was kept home through the efforts of a local citizens' committee, and provided medical care to civilians during those influenza-stricken years. Previously, he had been the first doctor in Jasper County to inoculate patients against diphtheria.

Dr. and Mrs. Chase have two sons, William B., Jr., who has been associated with his father in general practice in Des Moines since 1932, and Robert L., a production supervisor at the Solar Aircraft Co., in Des Moines.

As an undergraduate at S.U.I., before beginning his medical training, Dr. Chase was captain of the track team and participated in football.

CONTROLS IN MEDICAL CARE INSURANCE

Since the time when Bismarck set up Compulsory Health Insurance, there has been an unsolved problem in sick care insurance. How is it possible to control excessive demands for services by some patients and restrain the provision of unnecessary services by some doctors?

In Germany before World War II and elsewhere, one and another scheme of police control has proved the futility of such efforts. Patients and doctors are antagonized and "gang up" against the control administration. Where medical benefits are supplemented by cash relief for incidental unemployment, the difficulties of rational controls are compounded. Even when there were as many policemen as doctors, the abuses and excesses continued.

Here in North America, those of our insurers who ventured early into the field of health insurance have undertaken controls by placing part of the cost on the insured—the so-called deductible or coinsurance plans. This method is not satisfactory for several reasons. It does not abate the abuses when there is a deliberate effort to cheat. It may fail to relieve the financial stress where most needed socially. It works to the advantage of both doctor and patient when the doctor is willing to falsify a claim to cover the patient's part of the cost—a premium on dishonesty, a leak in the dike of fidelity.

In recent years, the so-called diagnostic services (x-ray and pathology particularly) have added further complications because they are not adaptable to insurance coverage: for example, when demand is made to satisfy curiosity. Here the coinsurance or deductible plan could serve as a reasonable restraint, then, only justifiably for the purpose of holding demands to a clinical necessity for the expense.

Speaking on the topic of controls in medical care insurance:

"As a general principle it is assumed that controls are needed for a small percentage of physicians and a small percentage of subscribers in any system of health insurance where there is a free choice of physicians who are paid fees for their services. Controls are intended to protect the majority of subscribers and physicians by preventing excessive demands for services by a few patients or the provision of unnecessary services by a few physicians."*

The modern electronic machines offer a possible solution. In the hands of the larger Blue Plans, they will permit experience to be analyzed as it has never before been scrutinized.

County by county, community by community,

* Darsky, B. J., Sinai, N., and Axelrod, S. J.: *Comprehensive Medical Service under Voluntary Health Insurance*. Cambridge, Massachusetts, Harvard University Press, 1958.

and doctor by doctor, it will be possible to compare and identify the patient and doctor in that 5 per cent to 10 per cent who are responsible for demoralizing comprehensive medical care in a free-choice, fee-for-service program.

At a practical cost in time and money, it will be possible to know how many patients were treated for any given condition or disease, how many visits at home or office, and the aggregate cost per individual case. This system admits of occasional and unusual variances without reflecting on either patient or physicians. But in any given area, one or a small number do not have all the unusual cases, while the majority of their colleagues treat only the ordinary or usual ones.

This takes problems of control of care rendered by physicians out of the lap of committees. Each doctor makes his own record, and on that he is judged. The record of a community is made by the community's doctors. The machinery merely compiles and monitors the data.

It will then be up to the local county medical society to say at what level the conduct approaches excess, and what to do about patients or doctors who habitually rate themselves in a bracket above par. Nothing dissipates and disciplines misconduct so certainly as exposure. Electronics can let the world know, whenever the medical society decides that such knowledge will serve the best interests of the profession and the public.

—Editorial, NEW YORK STATE
JOURNAL OF MEDICINE, 59:1746,
1748, (May 1) 1959.

CARE IN THE STORAGE OF POISONS

Dr. Seymour M. Blaug, an associate professor of pharmacy at S.U.I., feels that parents are at fault in many or even most cases of poisoning in children. "Parents don't seem to realize," he says, "that young children, especially five years of age and under, if given a chance, will eat and drink just about anything—from pills to gasoline."

He suggests that all poisons, including all medicines, be kept locked in a special chest. "Even vitamins in large doses can be harmful," he warns. Between 1952 and 1956, according to an AMA bulletin, 380 children in the United States under the age of five died from overdoses of aspirin, and Dr. Blaug feels that for every death reported there were some 150 cases in which overdoses were not fatal. Incidentally, he points out, if aspirin is stored in a loosely sealed bottle in a hot and humid bathroom medicine cabinet of the usual type, most of the effectiveness of the drug will be lost within several weeks. "Smell the aspirin," he urges. "If it has a vinegar odor, the aspirin has started to decompose."

Some other poisons in the home to which chil-

dren may have access include petroleum products such as furniture polish, and insecticides. Dr. Blaug reports that between 1952 and 1956 there were 446 children who died from such poisonings in the United States.

He and his wife have three daughters ranging in age from seven months to four years, and he says, "We keep all drugs and poisons locked in a steel case at home. It might be wise for others to do the same."

SOVIET MEDICINE EMPHASIZES QUANTITY

According to a news story published in the WALL STREET JOURNAL for May 11, Army surgeon general Thomas Parran and four other doctors who toured Soviet medical installations in 1957 have reported finding that the Russians sacrifice quality for quantity in attacking their medical problems.

The numbers of Russian physicians have quadrupled since 1925, they say, and in 1957 totaled 325,000, three-fourths of them women, or one doctor for each 613 persons. That number of people per doctor is almost exactly half the number of Iowans per doctor of medicine in the same year. But Dr. Parran and his associates went on to say that the Russian physician is less well trained than his American counterpart. In Russia a medical student gets only six years training beyond secondary school, whereas the American gets nine, and Russian medical schools are extremely overcrowded. The doctors visited one school where there were just six dissecting tables available for a class of 400 students. Also, they said, Russian pharmaceuticals are less plentiful and effective than their U. S. counterparts. They traveled 8,500 miles within Russia, and visited 61 medical establishments in the course of a month.

Russia has 68 medical schools, each of which graduates between 300 and 700 students per year. By contrast, the United States has 78, graduating between 100 and 200 each year. "It is interesting to note," the doctors said, "that political philosophy and political economy continue to be among the required courses throughout the six years of the Russian medical curriculum." They also commented on the fact that the average Soviet physician doesn't enjoy so high a status as a Soviet engineer.

Dr. Parran and his companions described the physical facilities at the Russian medical schools as "antiquated or jerry-built," and said that hospitals, though plentiful, seemed poorly-equipped. The Soviet Union claims to have between 10 and 11 hospital beds per 1,000 of population, whereas in the U. S. the ratio was 9.7 per 1,000 in 1957.

The Americans praised the Russians for giving high priority to the improvement of medical care generally and public health in particular. They said that malaria had been almost eradicated, but observed that tuberculosis still kills off Russians

in plague numbers, and mentioned that the abortion rate in Russia ranges between 30 and 85 per cent of live births.

Letter to the Editor

SECURITY, REGIMENTATION AND MEDICINE

SIR:

In an age and a country of plenty, we fear the future. An aspiration—security—becomes an obsession. We sacrifice our freedom, bit by bit, to achieve it.

Our concern for security is paramount. Much of our time in medical organizational councils is now consumed with discussion of fee schedules, methods of payment to the doctor, insurance plans, even personal health coverage to assure payment for services rendered to a colleague or his family. These matters all presume to increase our security.

The choice between freedom and security is never clear-cut. Certain freedoms must be relinquished if we are to live together. But where should the line be drawn? When a stand taken? The doctors, no less than others, now face such a perplexing decision. There seems but little time remaining to decide between professional independence or regimentation with security.

In times of uncertainty, it is natural that we turn to those doctors among us who by strength or default bear the burden of leadership. These good and well-meaning men give of their time and their energy, and we owe them our thanks. But panic has warped their judgment. They speak of realism and expediency, not of conviction and of principle. They support Medicare and oppose Forand, not because the former is right and the latter wrong, but because one has a lesser "impact" than the other. Or they endorse one and resist the other, although believing both to be wrong. They advocate self-regimentation and confuse it with self-discipline, forgetting that regimentation in itself is incompatible with our way of life. They propose that we tie our own hands lest they be bound by others.

The question of leadership poses a bewildering dilemma. Many of our most outstanding and respected doctors have no time for organizational leadership; they are too preoccupied with patients. Or they have no taste for the subtleties of organization, propaganda and maneuver inherent in the political phases of our societies. It might appear that they thereby default in an obligation to their profession, for the need seems urgent that all of

us take the time to engage in political matters of vital concern.

Actually, however, those doctors who are too busy for politics, or who have no taste for it, constitute our greatest strength against the progressive regimentation of the medical profession. Except for the few with medical backgrounds who truly become public servants and serve in legislatures and government with distinction, we have not the inclination, aptitude or training for politics. The exhortation to become political-minded is inappropriate and demeans us. We don't need more lobbying; we need less. Our battles will not be won or lost in legislative halls, but rather in the attitudes of the people. And the people will deal with us as our behavior deserves.

Such unsophisticated and old-fashioned ideas probably represent clichés to cynics and realists, and perhaps, like patriotism, are only for the immature and naive. But just as the loss of the simple ideal of patriotism will sap the will of the nation, so too the loss of dedication to the ideal of medical independence, and its heritage of service, will erode the spirit of our profession.

In the tradition of private practice in this country, when a doctor performed a service for a patient, an obligation was incurred by the patient to pay for the service. This obligation was tempered by the doctor to fit the patient's ability to pay. Today it seems of little importance to the doctor just who has the obligation, or who pays—only that he be paid. Herein lies our Achilles heel. For we tacitly admit the obligation may lie with someone other than him to who the service was rendered. And we forget that the bursar will inevitably become the master.

Currently we are engaged in attempting to solve the problem of the aged. We are advised that this can be done within the framework of the doctors' insurance plan. A new fee schedule is evolved. Regimentation is tightened. Our democratic processes confirm it, heedless of the fact that self-imposed regimentation is no more palatable, nor less of an evil, than any other form. The lure is security: certainty of payment, direct to the doctor.

It seems to me that the problem of our old people, along with the responsibility for its solution, rests with each individual during his productive years, or with his family. If the individual or his family cannot for one reason or another assume this responsibility, or is unwilling to do so, then it is proper and legitimate that the government do so.

It must be clear to everyone that the doctors, in spite of the best intentions, can no more solve the economics of the health needs of the aged than

the grocers can solve the nutrition needs, or the realtors solve the housing needs. The problems are sociological and therefore justifiably political. This does not concede that the individual or his family will be unable to find a solution without the aid of government, but only that it is a proper concern of government.

The doctor's duty, as I see it, remains now as it always has to give medical service at a cost compatible with the patient's ability to pay, without regard to the source of the patient's income. In reiterating this position, the doctor will gamble personal financial security to maintain independence.

Great social changes are taking place. Admittedly we cannot shape events to our will. If we remove ourselves from politics and the complexities of insurance, must we stand aside in frustration and defeat? The single most effective argument for active participation, as a profession, in politics and insurance is that we must do something, must offer some plan. The implication is that any plan is better than no plan. As doctors, we can certainly do something, but only in an area consistent with our ideals and our competence.

Primarily, we can each of us continue to perform our professional duties within our own spheres of practice to the very best of our abilities, and in the finest traditions of our profession, without undue regard to material gain and personal security.

Secondarily, but no less importantly, we can again enunciate and even publicize our principles, and stand on these. It has been said that the best way to solve a problem is to do what seems right and let Providence take care of the consequences. Such principles clearly indicate a belief that in the private practice of medicine the doctor has a right to set his fee and the patient has an obligation to pay, although the medical service remains available regardless of ability to pay. That the fee be reasonable and not exorbitant goes without saying. Our principles also include a belief that in those areas of health in which the private practice system is often inadequate, such as mental disease and tuberculosis, it is a rightful function of government to enter. If the health needs of the aged fall within this latter area, then it is incumbent on us to acknowledge it without pretense and without subterfuge. It has yet to be proved, however, that these health needs cannot be solved by individuals, their families and private enterprise without the help of government.

No one can know whether these elementary tenets are adequate to save our profession from the impending tragedy of complete regimentation, but assuredly ideals and principles, better than expediency and cleverness, do survive at times, and devotion to duty is not always unrewarded.

DANIEL F. CROWLEY, JR., M.D.

Des Moines, May 9, 1959.

Statements published in these columns are not to be taken as reflections of the opinions or attitudes of the editors of the JOURNAL.

American Medical Association

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May 7, 1959

John W. Billingsley, M.D.
President
Iowa State Medical Society
529 - 36th Street
Des Moines 12, Iowa

Dear Doctor Billingsley:

I had the pleasure of addressing the General Session of the Iowa State Medical Society during its annual meeting in April, immediately following a meeting of the House of Delegates.

I sat through a portion of this meeting of the House of Delegates and was extremely interested in the discussion pertaining to the new Blue Shield programs in Iowa, particularly the plan for the aged. On leaving Des Moines, I was not aware of the final action taken relative to these programs, but I have since learned that the policy established earlier by your Society was reaffirmed, with certain qualifications. As President of the A.M.A., and as a practicing physician, I want to commend Iowa physicians for their leadership and pioneering spirit in designing a medical care plan for those over sixty-five years of age.

Your society was one of the first in the nation to inaugurate a positive pilot program for the aged. There is no question that if Iowa physicians had responded negatively and reversed their earlier position on marketing a plan for the aged, their action would have had an adverse effect throughout the nation. For many years, the officers of the ISMS have shown unusual foresight in their planning, and there is every reason to believe that their sound judgment in the past will prevail in the future. We know that if the problem of health care of the aged is to be met on a voluntary basis, the groundwork for this voluntary system must be laid during the year 1959. All indications are that health care of the aged will be a major campaign issue in the election year of 1960.

I enjoyed being with you in Iowa during your convention, and wish you continuing success in your many worthwhile endeavors.

Very truly yours,



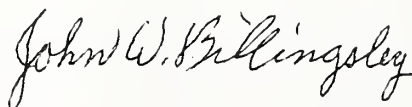
Gunnar Gundersen, M.D., President
American Medical Association

President's Page

All of us who have taken part in the work of the Iowa State Medical Society throughout the past several years deeply lament the passing of Dr. Lonnie A. Coffin. He gave us constant, wise and selfless leadership at great cost to himself in time and inconvenience.

Yet his devoted service to organized medicine is not the thing for which he is chiefly to be remembered. Rather, his major accomplishments were the competent and unremitting care he provided to his fellow townsmen and the virtually perfect model he left us of the twentieth-century Family Doctor. It was his responsibility, as he said, "to go and care for the sick when they needed him and when they wanted him." He let nothing interfere with his fulfilling that responsibility.

As is explained elsewhere in this issue of the JOURNAL, a Dr. L. A. Coffin Memorial Fund has been established, as a subsidiary of the I.S.M.S. Educational Loan Fund, to help medical students who intend entering general practice. By adding to that Fund, not just once but at regular intervals, each of us can indicate tangibly his devotion to the ideals that were the rules of Dr. Coffin's life.

A handwritten signature in cursive script, reading "John W. Billingsley". The ink is dark and the handwriting is fluid, with a prominent loop at the end of the last name.

President

THE JOURNAL *Book Shelf*



BOOKS RECEIVED

HEARING, A HANDBOOK FOR LAYMEN, by *Norton Canfield, M.D.* (Garden City, New York, Doubleday & Co., 1959. \$3.50).

YOUR MIND CAN MAKE YOU SICK OR WELL, by *Curt S. Wachtel, M.D.* (Englewood Cliffs, New Jersey, Prentice-Hall, Inc., 1959. \$4.95).

HISTORY OF AMERICAN MEDICINE, A SYMPOSIUM, ed. by *Felix Marti-Ibanez, M.D.* (New York City, MD Publications, Inc., 1959. \$4.00).

NAVY SURGEON, AN AUTOBIOGRAPHY, by *Rear Admiral Lamont Pug, M.C., U.S.N., Ret.* (Philadelphia, J. B. Lippincott Company, 1959. \$5.00).

FUNDAMENTALS OF OTOLARYNGOLOGY, A TEXTBOOK OF EAR, NOSE AND THROAT DISEASES, by *Lawrence R. Boies, M.D.* (Philadelphia, W. B. Saunders Company, 1959. \$8.00).

A DOCTOR REMEMBERS, by *Edward H. Richardson, M.D.* (New York City, Vantage Press, 1959. \$3.95).

DISEASES OF WOMEN, TENTH EDITION, by ten teachers under the direction of *Frederick W. Roques, M.D.*, ed. by *Frederick W. Roques, M.D., John Beattie, M.D., and Joseph Wrigley, M.D.* (Baltimore, Williams & Wilkins Company, 1959. \$8.00).

CIBA FOUNDATION SYMPOSIUM ON THE BIOSYNTHESIS OF TERPENES AND STEROLS, ed. by *G. E. W. Wolstenholme, O.B.E., M.A., M.B., B.Ch., and Maeve O'Connor, B.A.* (Boston, Little, Brown and Company, 1959. \$8.75).

BOOK REVIEWS

THERAPEUTIC RADIOLOGY: RATIONALE, TECHNIQUE, RESULTS, by *William T. Moss, M.D.* (St. Louis, The C. V. Mosby Company, 1959. \$12.50).

This excellent text on radiation therapy fills a great need for an up-to-date collection of methods used in this important field. It is divided into 20 chapters on the basis of the anatomical systems. Neoplasms of all of these systems are individually considered and comprehensively covered. The last chapter considers the treatment of selected soft-tissue tumors such as keloids, warts and hemangiomas.

A unique feature of the book is the discussion at the beginning of each chapter of the response to radiation of the normal tissues of each system being considered. This is followed by an outline of specific methods of treatment, with details as to the technics recommended. Where there are different approaches to the treatment of a specific lesion by radiation, adequate discussion of the various modalities is presented. Tabulation of results of treatment aids in the evaluation of these modalities. There are 146 illustrations in the book, and abundant case presentations to illustrate the problems encountered in clinical practice.

The author makes no attempt to cover the vast field of radioisotope therapy, stating that there are good textbooks available on that subject.

This text will be a very welcome addition to the library of the resident in radiology as well as of the practicing radiologist.—*James T. McMillan, III, M.D.*

PATHOPHYSIOLOGY IN SURGERY, by *James D. Hardy, M.S. (Chem.), M.D.* (Baltimore, Williams & Wilkins Company, 1958. \$19.00).

Dr. Hardy has gathered voluminous factual data of practical significance, and has capably digested the material into a single volume. As the title indicates, this is a book on pathophysiology, and the information presented is predominantly concerned with diseases of a surgical nature. However, these diseases are of interest to all physicians, and Dr. Hardy has presented the basic fundamentals of physiology that are involved without belaboring minutiae and details.

The material is attractively presented both by the author and by the publisher. The book is replete with original charts and diagrams, and there are well selected and illustrative case histories. An adequate bibliography follows each chapter, and the table of contents and the index are very well compiled.

This book is definitely a departure from the format of previous surgical physiologies, and I personally feel that the departure is in the right direction. In achieving brevity, the author has not sacrificed either clarity or completeness. It is a book that can be appreciated by every doctor.—*Alfred N. Smith, M.D.*

LIPIDOSES: DISEASES OF THE INTERCELLULAR LIPID METABOLISM, THIRD EDITION, by *Siegfried J. Thannhauser, M.D., Ph.D.* (New York, Grune & Stratton, 1958. \$19.75.)

There can be no question that the book under consideration is the author's labor of love. He has been working in the field for decades, and is therefore the most experienced man on this subject in the country. This expensive book covers the topic most thoroughly. The contents include "Physiology and Chemistry of Lipid Metabolism," "Hyperlipemia," "Xanthomatosis," "Gaucher's Disease," and "Neimann-Picks Disease." An extensive bibliography follows each section. Scattered throughout the book are photographs of diseases under consideration, and case reports of illustrative examples of conditions to be discussed. In the section on "Chemistry and Physiology," rather deep and extensive chemical material is dealt with.

There can be no question, either, that this book is a monumental contribution to this rather limited field of unusual conditions. The work is organized with characteristic Teutonic thoroughness. The illustrations and tables are excellently conceived. An intangible criticism, however, is that the book is difficult to read. Perhaps the difficulty is that the subject matter itself is "greasy." That is to say, there are few points regarding fat metabolism upon which everyone is agreed. Even the author admits that during the years some of his concepts have been rejected. Or the difficulty may be that the author's style is a bit ponderous.

Be that as it may, no one can question the tremen-

dous amount of hard labor that has gone into the construction of the book. It will stand as an obelisk against the horizon—a monument to the author. It is not a "popular" book to be found in "every practitioner's library," but it should be available in libraries and should be read by doctors particularly interested in the biochemistry of disease.—*Daniel A. Glomset, M.D.*

PREVENTIVE MEDICINE IN WORLD WAR II: VOL. IV, COMMUNICABLE DISEASES TRANSMITTED THROUGH RESPIRATORY AND ALIMENTARY TRACTS, by the Medical Department of the U. S. Army, prepared by *Maj. Gen. S. B. Hays*, edited by *Col. John Boyd Coates, Jr., M.C., and Ebbe Curtis Hoff, Ph.D., M.D.* (Washington, D. C., U. S. Government Printing Office. 1958. \$5.50).

The Medical Department of the United States Army is now busy digesting its experiences during World War II. Its books include an Administrative Series and a Clinical Series. The books published in the Clinical Series include ones on preventive medicine, surgery and miscellaneous topics. The volume at hand is the fourth volume in the series. It carefully documents material on the communicable diseases as experienced in all theatres of operation. Each disease is dealt with separately except for an introductory section on "General Considerations." Many tables and graphs are included on each disease, and each author is an outstanding authority in his speciality. Many, if not all, had actual experience with the disease in World War II, and consequently the experiences they have reviewed are partly firsthand.

This volume is almost entirely documentative and statistical, and doesn't contain a great deal of comment. Summaries and recommendations are too succinct, in the opinion of this reviewer. The book, therefore, is one of statistical analysis, rather than one for popular distribution and "easy reading." It will admirably fill a place in libraries, and the information it contains will be worthwhile for the future.—*Daniel A. Glomset, M.D.*

MATERNITY, A GUIDE TO PROSPECTIVE MOTHERHOOD, by *Frederick W. Goodrich, Jr., M.D.* (Englewood Cliffs, New Jersey, Prentice-Hall, Inc., 1959. \$1.75).

This is a small, concise and well-written book covering the prenatal and postpartum periods of motherhood, written for the patient and her husband.

This, the newest book of its sort, is quite well done, and it suits the purpose of the doctor who wishes to provide something extra for his obstetrical patients. Along with prenatal instructions, a copy of this book would be quite desirable.—*Claude H. Koons, M.D.*

CHILDBEARING BEFORE AND AFTER THIRTY-FIVE, by *Adrien Bleyer, M.D.* (New York, Vantage Press, 1958. \$2.95).

This is a monograph on the effects of maternal age on offspring. It has been written in a non-scientific way and is directed to the so-called college group of individuals—the people who are most likely to read this type of literature and, at the same time, those who are most likely to put off having their families.

The presentation is quite complete as regards historical data, reviewing by means of graphs all of the major work having to do with correlations between maternal age and congenital defects. The book is quite

lengthy and repetitious, and one gets the feeling that Dr. Bleyer has written it as a sort of bible—a foundation on which future sociologic investigators may base their work.

Dr. Bleyer presents some extremely interesting and somewhat startling facts regarding the considerably larger percentages of many congenital abnormalities in the infants born to mothers in the older age groups, and I recommend the volume to anyone who has an interest in that phenomenon. Furthermore, I recommend it to any physician who has a yen to improve the race, so that he can refer to it when he is asked to recommend a period of time which is ideal for motherhood.—*Claude H. Koons, M.D.*

SURGICAL PATHOLOGY, SECOND EDITION, by *Lauren V. Ackerman, M.D., and Harvey R. Butcher, Jr., M.D.,* (St. Louis, The C. V. Mosby Company, 1959. \$15.00).

Dr. Lauren V. Ackerman, professor of pathology, and Dr. Harvey R. Butcher, associate professor of surgery, both of Washington University, St. Louis, have collaborated in producing the second edition of SURGICAL PATHOLOGY. As they have pointed out, this book is not intended to replace the general pathology textbooks, but rather to supplement them. The authors have done an excellent job of correlating the gross and microscopic pathologic findings with the more common clinical findings.

The text is organized according to the body systems and is written in such a fashion as to make it enjoyable reading. Because of the vast scope of the book, some details and some of the rare conditions have been omitted, but for readers who desire more detailed discussions, each chapter is followed by an up-to-date bibliography.

This book is highly recommended to all physicians who diagnose and treat surgical pathologic conditions.—*Charles C. Edwards, M.D.*

THE YEAR BOOK OF DRUG THERAPY, 1958-1959 YEAR BOOK SERIES, ed. by *Harry Beckman, M.D.* (Chicago, The Year Book Publishers, Inc., 1959. \$7.50).

As usual, the 1958-1959 YEAR BOOK OF DRUG THERAPY contains practical information to guide the busy practitioner as he attempts to evaluate the numerous new drugs.

With Dr. Beckman's editorial comments, the reader can reap the benefits of many months of hard work in a relatively short time. Not only are there comments about individual drugs and their current utility, but there are also some observations about their ultimate worth when time shall have added the proper perspective.

The tranquilizers, Dr. Beckman thinks, should be evaluated most carefully, so that the physician may not abandon one of them just because a newer one has come on the market.

A wide scope of information is presented, ranging from data on the worth of buffered aspirin to many valuable discussions of anticoagulants.

I heartily recommend this book to all physicians who wince or are bewildered on receiving each successive new-drug announcement.—*Edward R. Posner, Jr., M.D.*

THE DOCTOR'S BUSINESS

Industry Forecasts for 1959

HOWARD D. BAKER

WATERLOO



Current estimates for 1959 indicate a Gross National Product of \$471,000,000,000 for the year. This compares with \$436,000,000,000 for the year 1958 and \$440,000,000,000 for 1957, or a rise of about 8 per cent over 1958.

Analysis of this Gross National Product estimate indicates the following increases: 5.5 per cent in personal consumption expenditures; 14.6 per cent in durable goods; 23.4 per cent in private investment; 15.6 per cent in manufacturing equipment; 7 per cent in government expenditures; 5.5 per cent in disposable personal income; and 9.8 per cent in industrial production. The estimate that Gross National Product will rise about 8 per cent to a new record high appears to be a realistic basis for business and financial planning for the year 1959.

Following is a summary of individual industry prospects for 1959 from an industry survey by Standard & Poor's Corporation:

Aircraft. Output of military and commercial aircraft in addition to continued growth in missile deliveries should benefit earnings. Variances in distribution of activity among research, development and production will cause wide divergencies among companies.

Automobiles. Production is tentatively projected at 5,500,000 units, up 30 per cent from 1958. All car makers should realize improved earnings.

Building. New-construction spending will be up about 7 per cent, with residential and highway building accounting for 80 per cent of that increase. Maintenance, improvement and replacement business should also increase. Building-materials sales will probably benefit most in this industry, with prospects for cement companies particularly good.

Chemicals. Sales should rise about 10 per cent, as general economic recovery occurs. Profits should show a steep percentage increase.

Drugs. New-product introduction and continued expansion of established products should increase industry sales by about 10 per cent. Percentage gains in profits should be at least as good as in sales.

Food products. Population growth, rising consumer expenditures for food and new-product development point to gains in food sales for 1959. Higher profits should result for this group, despite the uptrend in operating costs.

Farm machinery. Sales will probably be slightly below record 1958 sales. Gains are indicated for producers with important diversification such as truck and road-building equipment manufacture.

Nonferrous metals. Increased industrial production is a major factor which will increase demand for these metals. Replenishment of depleted inventories will give added impetus to recovery in this group. Marked earnings gains are in prospect.

Office equipment. All sectors of this business will experience improvement, with the greatest gains in accounting and computer divisions.

Steels. Production should increase from 85,000,000 tons last year to over 115,000,000 tons in 1959. Improved plant efficiency and price increases point to outstanding profit potentials for this group.

Textiles. Sharply higher earnings are indicated for 1959 due to inventory replenishment, higher prices and increased production efficiency.

In general, 1959 should be a year of industrial and economic recovery. One of the major results of the 1958 recession is a marked improvement in efficiency and plant utilization. In most industries, this factor combined with an increased demand for products will mean substantial improvement in profit margins.

Blue Shield States Its Case

The Role of the Physician and the House Of Delegates in the Future of Blue Shield

RUSSELL B. CARSON, M.D.

FORT LAUDERDALE, FLORIDA

A COUPLE of New England doctors dropped by our new hospital last February and asked if they could look the plant over. Naturally in our part of the country we are always glad to show off our real estate. So, having more time than patients at the moment, I took these two visitors around. I do not recall now exactly what led to an introduction of the subject of Blue Shield, but having just returned from a Blue Shield professional relations meeting in Chicago, I was primed and ready to talk.

During rounds, they put the question to me, "How are you getting along with Blue Shield in Florida?" So we spent the next half hour discussing Blue Shield. It seemed that they had a good, comprehensive plan in their home state. The fee schedule was liked well enough, the acceptance by the public was overwhelmingly good, *but* the doctors of the state recently had awakened to the fact that they had little or nothing to say about how the plan had developed, how the policies of the plan were being made and what future changes in policy, contract, services and the like were contemplated.

INTEREST IN BLUE SHIELD

This is not an unusual situation, for it seems to exist to some degree in many plan areas. I have had an opportunity to observe this fact in the past few months as a National Board of Directors member. An awakening of interest in Blue Shield by the profession is taking place. It seems to be more or less a stage in our development. We have been through a similar period of transition in Florida, and are just now beginning to reap the fruits of arduous labor on the part of those who held an interest and a belief in the principles which originally developed Blue Shield 15 years ago. We found out several important facts in our state during the past two years of study. First, we found out that the profession wants Blue Shield. Second,

This is the eighth of a series of articles discussing health insurance problems. The papers, some of them by Iowans and others by physicians from outside the state, are intended to provide a broad, factual base for really informed opinion.

we discovered that the profession wants to participate in the strengthening, broadening and developing of Blue Shield. Third, we found that the profession wants to learn enough about Blue Shield to be able to direct its policies intelligently. Last, doctors want to have a product they are proud to participate in selling.

We know the public wants Blue Shield because, in spite of the keen, gregarious competition, the people buy and buy. Blue Shield covers 15.5 per cent of your state's population, 16.9 per cent of the population of the state of Florida, and as high as 48 per cent of the population of the states of Delaware and Michigan, and of the District of Columbia, individually. Twenty-three per cent (or 39,619,000 subscribers) of the entire population of the United States and possessions were enrolled in Blue Shield in 1957.*

Blue Shield was such a socio-economic necessity that the public demanded an opportunity to participate in it, once the medical profession had made the offer to accept prepayment of services. The public took hold of the idea of installment prepayment buying as a part of the general trend in our post-depression economy.

ROLE OF THE PHYSICIAN

Governmentalization of medicine, together with its sponsors, Ewing, Pepper, Murray-Wagner-Dingell (names almost forgotten now), will have to wait until Blue Shield with its physician sponsorship fails to keep its faith with the public. This we cannot permit to happen. Prepayment plans and insurance coverage have become so much a part of our daily lives that the public has gotten out of the habit of paying doctors' bills. Blue Shield has become a charge card for health. It is up to us, the physicians, who direct the destinies of Blue Shield, to provide for and protect the in-

This address was delivered before the House of Delegates of the West Virginia State Medical Association on August 20, 1958, and is reprinted from the March, 1959, issue of the WEST VIRGINIA MEDICAL JOURNAL. Dr. Carson is president of Blue Shield Plans of Florida and a member of the Board of Directors of the National Association of Blue Shield Plans. He is also chairman of the Professional Relations Committee of that organization.

* Enrollment Report, Blue Shield Plans, December 3, 1957.

terests of the subscribing public. This is the principal role of the physician in the future of Blue Shield.

ROLE OF THE HOUSE OF DELEGATES

Now let us turn to the role of the House of Delegates.

Contract payment and fee schedules for medical care expenses are an old method of handling medical costs. It is claimed that the Chinese paid their physicians to keep them well and charged *them* when they were ill. In the Holy Book Vendidad of India, we understand that a fee schedule was fixed so that a doctor might heal a priest, and in return receive a benediction. The fee for treating the governor of a county was four oxen; the governor's wife, a female camel; the mayor of a large city, a bull; the mayor's wife, an ass. Frederick II, emperor of the Holy Roman Empire in the 13th century, fixed a fee schedule for medical care wherein the poor were treated free of charge, and a graduated scale up to 60 centimes per day could be charged for the patient with means. Feudal lords of large estates with many dependent tenants hired physicians to take care of the sick at a predetermined annual salary.

The direct forerunner of our present idea of prepayment plans appeared in the United States 60-75 years ago, when the lumbering and mining companies operating in remote areas began to provide medical care for the company employees on a contract basis. Some companies made contracts directly with individual physicians to provide complete medical services for employees, and sometimes their families. The contract physicians were remunerated on the basis of the number of employees cared for during the month.

"MEDICAL BUREAUS"

In the Northwest, a substantial amount of all medical care rendered wage earners had come within the jurisdiction of the "Medical Bureaus" by the 1920's. In some instances the "Bureaus" were organized and sponsored by medical societies who contracted with the employers for the care of employees, who then had free choice among all the participating physicians. In 1939, the first Blue Shield type plan was established in California with capital funds advanced by the California Medical Association. In the beginning, enrollment was slow, and it developed that a substantial deficit occurred through greater than anticipated utilization. To stabilize the plan, the participating physicians agreed to accept a less-than-par payment as complete service payment. In this way, financial security of the plan was established. The experience in California, which was repeated elsewhere during these formative years of Blue Shield, underlies an important, distinctive feature of the doctor-sponsored plan, i.e., the acceptance of medi-

cal care responsibility to the subscribers by the sponsoring medical organization. Thus we recognize the fundamental differences between a Blue Shield plan and a contract practice. Likewise, we should be able to recognize the difference between what we sponsor in Blue Shield and a third-party commercial insurance associate, or a social security suicide of free-enterprise medicine.

We have developed the genealogy of Blue Shield. Now, let us look more closely at what a Blue Shield plan actually is. Blue Shield® is a service mark plus an identifying symbol protected by registration with the United States Government and protected by the United States Courts. It is a symbol and name recognized by millions of people in the United States, and to them it stands for a specific product. Do we actually have a specific product? In some respects, I think we have a most valuable product, but there is room for much improvement.

The public expects an advertised article to be of standard quality, and to be available where advertised. Above all, the public expects that the product will carry a sound guarantee and service policy. Do we have all of these things in Blue Shield? Can a subscriber buy a similar policy in Maine as in California; in Indiana as in Florida; in Pennsylvania as in West Virginia; or in Parkersburg as in Huntington? Standardization of your product in West Virginia would solve a problem which is now confusing your subscribing public.

In 1946, the Council on Medical Service of the AMA developed what later became known as "Standards of Acceptance for Medical Care Plans," and in connection with these "Standards" the Committee on Prepayment Medical and Hospital Service offered a "Seal of Acceptance" to those plans sponsored or approved by medical societies which met the "standards." The "Seal of Acceptance" program was discontinued in June, 1954; however, the House of Delegates of the AMA directed that in the future ". . . the standards and principles will be maintained as guides and recommendations for all groups operating or establishing plans."

REVISION OF "STANDARDS"

A revision of the "Standards" has been made and was submitted to the House of Delegates of the AMA in San Francisco, in June, 1958. The "Suggested Guides for Medical Society Sponsored Voluntary Prepayment Medical Benefit Plans" relates primarily to the broad objectives, benefit structures, criteria for performance in the public interest, and relation of the medical profession to the various medical society plans. The main objectives are: (1) To provide the public, represented by the subscribers, an economic method of meeting the costs of medical care by providing, on a sound financial basis, the services of physicians or a high propor-

tion of the cost of such services, and (2) to support the best standards of medical practice of a professionally qualified, independent medical profession.

Therefore, we can interpret that the American Medical Association, even though it still refuses to call Blue Shield by name, has set forth a set of guiding principles to be followed by medically sponsored voluntary prepayment medical benefit plans. (At least we were not called "insurance companies.")

These guiding principles should be adopted by the House of Delegates of the West Virginia State Medical Association (and all other state associations) as the basis for establishing any medically sponsored health benefit plan.

At the 1958 Annual Conference of Blue Shield Plans, a "special committee to study standards for desirable coverage" reported its recommendations concerning "... certain underlying essentials of plan structure and organization." They are as follows:

1. Any Blue Shield Plan should have an organic structure that gives the medical profession a controlling voice in all matters of medical policy, in the composition of the boards and committees of the Plan and their terms of office, in schedules of payment, in adjudication of disputes and grievances relating to cases and payments, and in all administrative procedures affecting professional relations.

2. Counterbalancing its controlling voice in the destiny and operation of the Plan, the profession, individually and collectively, should be brought to recognize and accept a feeling of direct responsibility for the Plan—for maintaining its good name, for supporting its objectives, and for promoting its acceptance and understanding on the part of the people.

3. Each Plan should strive at all times to increase its scope of services, in order to provide as broad a range of services as the local medical profession is willing to provide through the mechanism of the Plan.

4. Each Plan should attempt to keep pace with changes in the economy within its area, and should follow a policy sufficiently flexible to assure that it certainly will be making its benefits—in terms of prepaid professional services—available to at least as great, if not a greater, proportion of its people.

We have given consideration to the guides as set forth by our parent association, and we have considered the essentials of Plan structure of Blue Shield. Now, where in the picture does the House of Delegates of a state association fit in? Medicine in West Virginia is the same medicine as that practiced in Florida or in any of the other 47 states. We have a diversity of problems in each state which must be met and solved locally. The dis-

similarity between growing apples and digging coal is no greater than that between growing oranges and mining Yankee dollars. The basic precepts of a prepayment plan are the same for everyone. The definitions for standards of care, the extent of coverage, and the limits of service benefits should be determined by the physicians who render the services, but they also must be acceptable to the subscriber. Local ground rules vary, and it is for this reason that a degree of autonomy must exist in every state or area. Far be it from me to tell you what your desires should be with regard to, for instance, the degree of trusteeship control; whether you wish to sponsor partial or complete coverage for subscribers; whether you want a high or low income ceiling. These are your problems—West Virginia problems.

To obtain and hold strength, however, a certain positive degree of unity also must prevail. Trite but true, "In unity there is strength."

The role of the House of Delegates, as the elected representatives of the medical profession in West Virginia, should be one of basic policy making. To accomplish this, certain guiding principles have been established. As the governing body of West Virginia medicine, it is your duty and responsibility to implement these guiding principles into specific controls governing any and all plans coming under your jurisdiction. It should be the House of Delegates that:

1. Provides the sponsorship of Blue Shield of West Virginia.

2. Has the controlling voice in all medical policy matters, either directly or through control of the trustees who are responsible for the operation of the plan.

3. Determines the scope of benefits to the subscribers.

4. Determines the limits of service benefits to be provided by participating members.

5. Determines who shall be participating members.

6. Lends active support in every way possible to the sponsored plan, and considers it an integral part of organized medicine.

7. Maintains a mechanism to promote a quality of medical care to subscribers equal to that rendered fee-paying non-subscribers.

8. Maintains an active state medical association advisory committee on voluntary prepayment plans to assist plans in contract development, fee schedule revision, local and county society professional relations and subscriber relations. (We call this our "Committee of 17" in the Florida Medical Association, and give full credit to the Committee for bringing a measure of informed understanding regarding Blue Shield to Florida physicians beyond the fondest hopes of the Board of Directors.)

9. Takes positive steps to protect physicians

and the plan from abuses by unwarranted use of the plan, either by subscribers or by uncooperative participating physicians.

SUMMARY

In summary, then, the role of the individual physician must be to become once again an integral, interested, cooperating part of the idea and ideals of Blue Shield philosophy. It is the responsibility of each physician to learn what Blue Shield is. It is the responsibility of Blue Shield to provide this information.

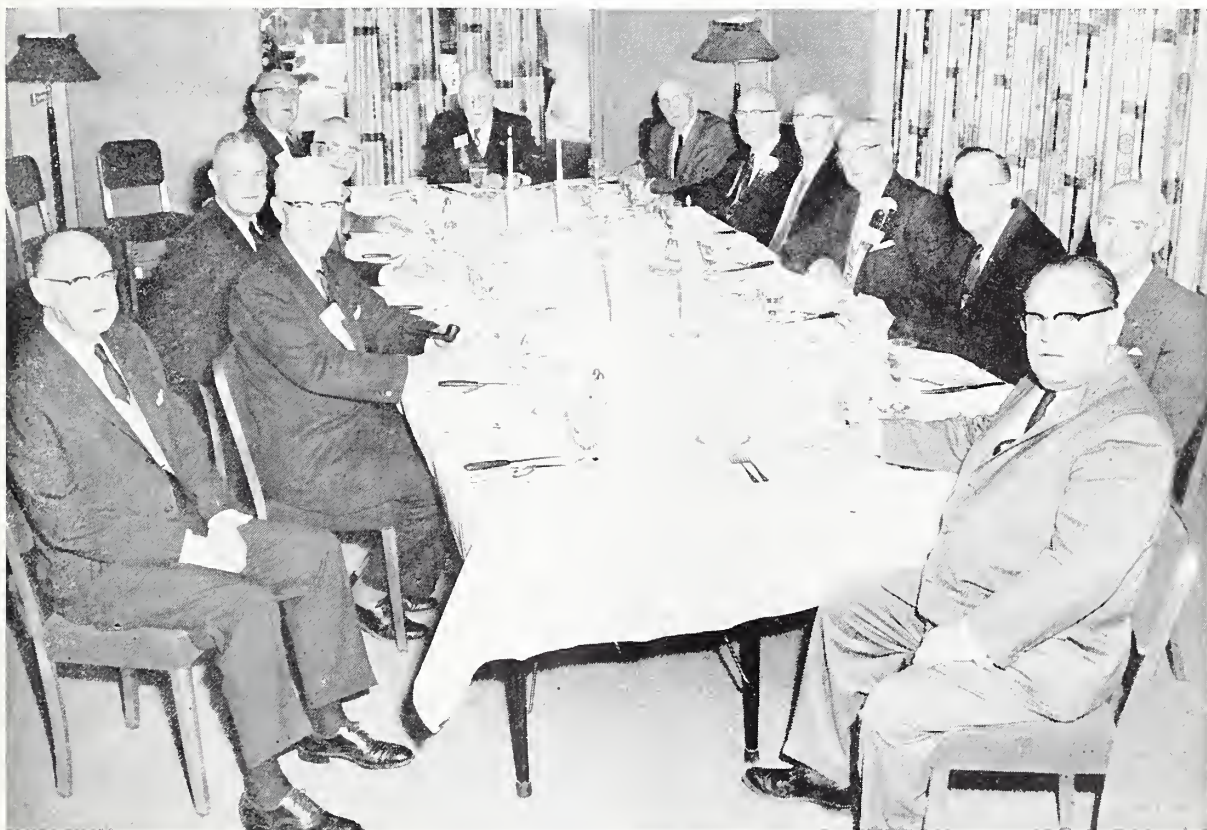
It is the responsibility of the doctor to acquaint himself sufficiently with the problems, needs and desires of the subscriber to the end that satisfactory solutions to these problems can be obtained. Our medical, social and economic lives are ever changing. So must Blue Shield be altered to meet the challenge presented by these changes. The physician participating in Blue Shield must remain its guiding force and must hold the controlling interest in Blue Shield.

The House of Delegates must hear the desires of the subscribing public and the servicing physician. It must provide the working rules, the guiding principles and the sponsorship for any and all voluntary prepayment medical plans developed within its jurisdiction. Medical policy control must rest in the hands of the governing body.

Parenthetically, I wish to point out that corporate affairs and control must rest in the hands of the trustees of the plan.

It is my opinion that West Virginia medicine would be best served by a single strong Blue Shield plan backed by state sponsorship, a single controlling body, and by the elimination of competition in a non-competitive, non-profit field. Certainly this would help to eliminate confusion in the minds of a subscribing public who do not understand why "my Blue Shield is different from your Blue Shield."

Medical sponsorship must be real, medical approval must be active, and medical control must be genuine and tangible, if Blue Shield is to be truly the "doctors' plan."



This picture was taken at the ISMS Past-Presidents Dinner, held in Des Moines on April 20. Around the table, beginning at the left were: Dr. Ransom D. Bernard, Ames; Dr. Ben T. Whitaker, Boone; Dr. D. C. Conzett, Dubuque; Dr. H. A. Spilman, Ottumwa; Dr. Lonnie A. Coffin, Farmington; Dr. Walter L. Bierring, Des Moines; Dr. Charles B. Taylor, Claremont, California; Dr. Robert L. Parker, Des Moines; Dr. James E. Reeder, Sr., Sioux City; Dr. T. F. Thornton, Sr., Waterloo; Dr. R. N. Larimer, Sioux City; Dr. Wendell L. Downing, LeMars; and Dr. Walter D. Abbott, Des Moines.

STATE DEPARTMENT OF HEALTH

Edmund G. Finney
COMMISSIONER

POLIOMYELITIS CASES, IOWA, 1958

Continuing our analysis of the 1958 poliomyelitis cases,* Figure 1 shows the distribution of paralytic and non-paralytic cases by age groups. The 73 Iowa cases ranged in age from four months to 49 years. The median age for all cases was 14 years. The median age for the 35 patients with paralytic poliomyelitis was six years, and the median age of the 38 patients with non-paralytic cases was 15 years.

The distribution of the 35 paralytic cases shows 20 of them to have occurred to children under 10 years of age, six in the age groups of 10 through 24 years, and nine in persons over 25 years of age. Iowa's immunization records indicate, as does the graph, that many young children and many in the young-adult brackets have not had their shots.

The bar graph that constitutes Figure 2 represents Iowa's 73 paralytic and non-paralytic cases of poliomyelitis for 1958 divided according to the number of Salk shots the patients had received. Twenty-three patients with paralytic and

20 with non-paralytic polio—over half of the total number—had received no vaccine. The 12 patients who had paralytic disease after receiving either two or three injections are of special interest. From the individual case data presented in last month's JOURNAL, it is apparent that of the six indicated in the graph as having developed paralytic poliomyelitis after two injections, one was a youngster with onset of illness seven days after the second injection. Another of these patients had onset of illness three months after the second injection. In these two instances, protective levels of immunization had not been attained. The other four with intervals of 10, 13, 14 and 23 months since the second administration, had fallen by the wayside and had not completed the basic immunization series of three injections.

Of the six paralytic cases that occurred in patients who had had three injections of vaccine, the time intervals following the last injection had been 9, 11, 18, 19, 21 and 32 months. These persons, very likely, had good basic immunity following the series of three injections, but should have had booster injections to keep that basic

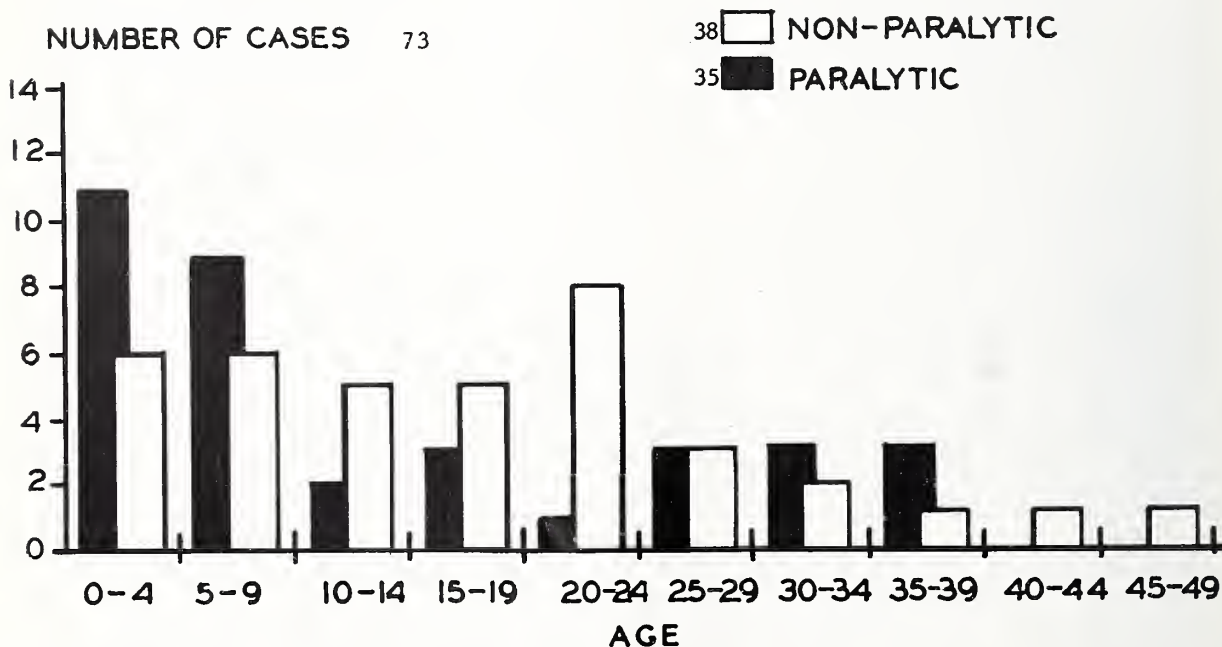


Figure 1.

* J. IOWA M. SOC., 49:318-319, (May) 1959.

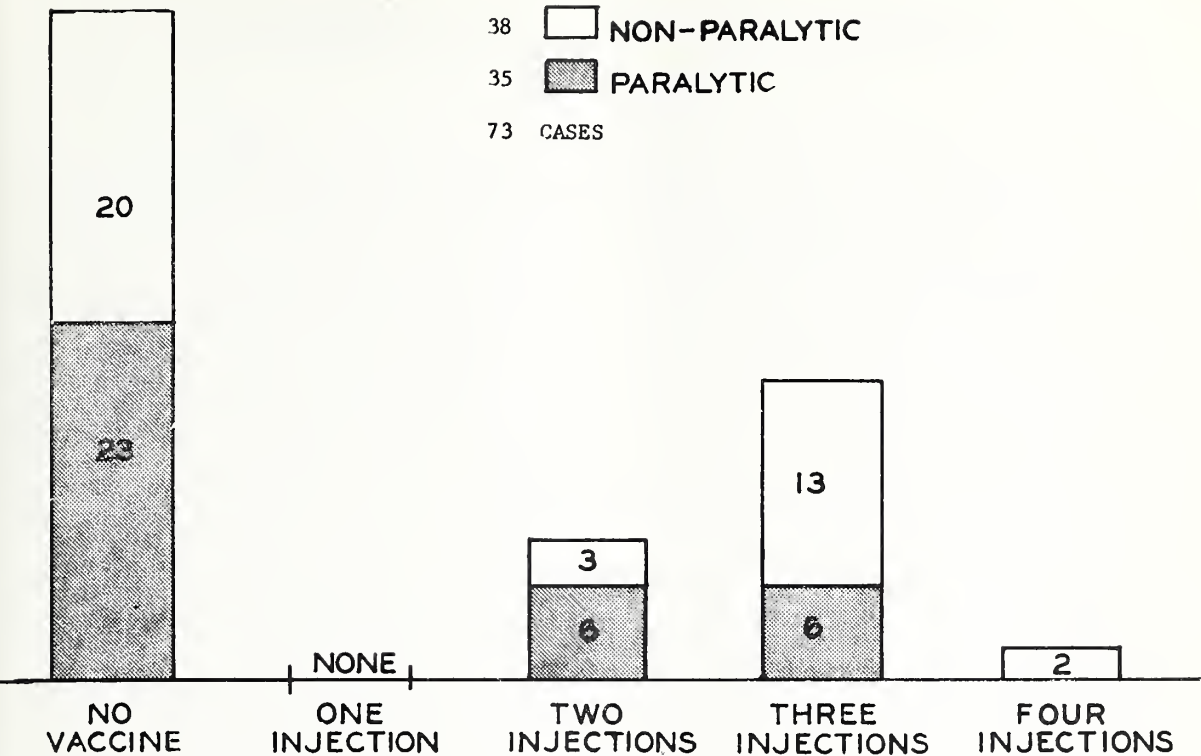


Figure 2.

immunity at a good level. Various research reports that have appeared within the last year or two support this contention. They show that a series of three injections of poliomyelitis vaccine properly spaced will develop good basic immunity, but by nine months following the last injection there is a very definite antibody loss in most instances. This lowered antibody level response is found by these same investigators to respond rapidly and well to booster immunizations.

These few cases added to similar cases from other states very clearly indicate the need for booster injections of poliomyelitis vaccine. They also indicate that the first booster should be given about a year after completion of the original series of injections.

Help your central office to maintain an accurate mailing list. Send your change of address promptly to the Journal, 529 Thirty-sixth Street, Des Moines 12.

PLASTIC DRYCLEANING BAGS ENDANGER CHILDREN

Health departments in Arizona, Illinois and New York, and the National Safety Council have warned that scores of children are likely to suffocate as a result of playing with plastic drycleaning bags. There is an irresistible temptation for youngsters to put their heads into these transparent sacks, and according to Dr. Paul B. Jarrett, chairman of the safety committee of the Maricopa County (Phoenix, Arizona) Medical Society, an electrostatic charge may have been generated in the material by friction from handling. As a result, an electrical attraction causes it literally to grab the face.

The dangerous material won't tear when a child fights it, and dizziness, inability to think clearly, spasms of muscles and more and more rapid breathing ensue. Vomiting and consequent inhalation of undigested food puts a finish to this terrible sequence.

Dr. Jarrett concluded, "Such a horrible combination as a child playing with a venomous reptile would not result in death as quickly as suffocation by the plastic film which clings to the face with diabolical tenacity."

Comparisons in Iowa Vital Statistics 1957-1958

The rates charted on the accompanying graphs are based upon the numbers of marriages, births, infant deaths and deaths from all causes reported to the Division of Vital Statistics of the State Department of Health during the month indicated. The monthly rates are adjusted to an annual base for ease in comparison. The population for each month is assumed to be stabilized at the estimated figure for July 1 of each year: 2,707,000 for 1957, and 2,736,388 for 1958.

Marriages. During 1958, many of those who married seem to have postponed the ceremony beyond the month of June, whether from personal preference or because of the uncertainty of the economic picture early in the year. The national trend toward fewer marriages in 1958 than in 1957 is reflected in our Iowa data up to the month of August, when the 1958 level overcame that of 1957 and maintained that increase through December. The decreases in the rates of marriages per 1,000 population for May and June 1958 vs. 1957 were 10 and 9 per cent, but during the months of August and November the 1958 rates were 12 and 11 per cent greater than those for the corresponding months in 1957.

Births. Generally, the numbers of births per month were lower in 1958 than in 1957. This was true for the nation as a whole, and for the West North Central Region, as well as for Iowa. The birth rates per thousand of estimated population for 1958 were, respectively, 24.3, 23.8 and 22.4 for

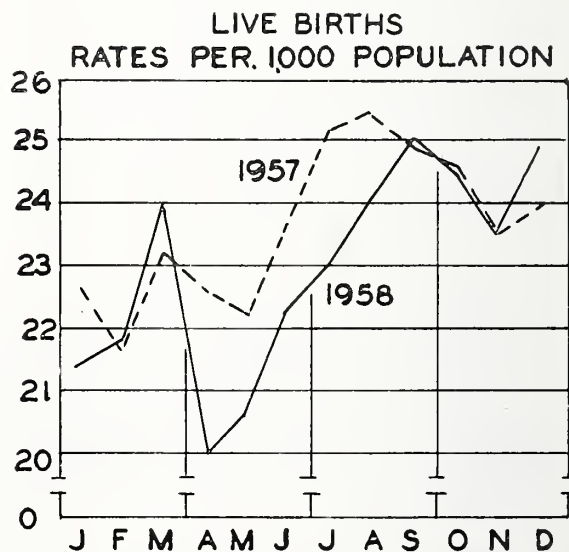
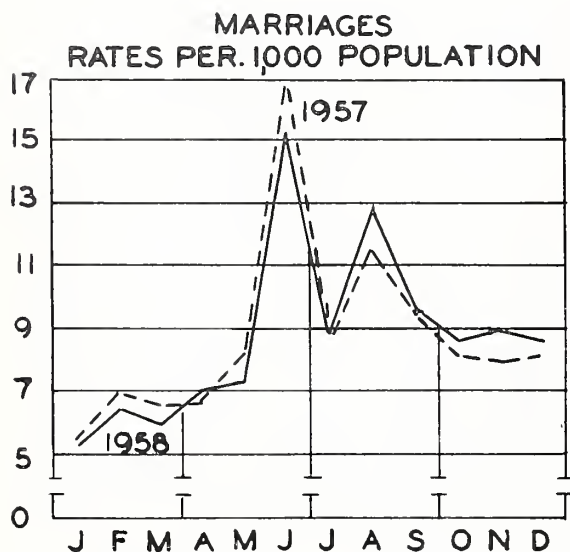
those areas. Only Nebraska, of the seven West North Central states had a lower rate than did Iowa—22.2 per thousand population.

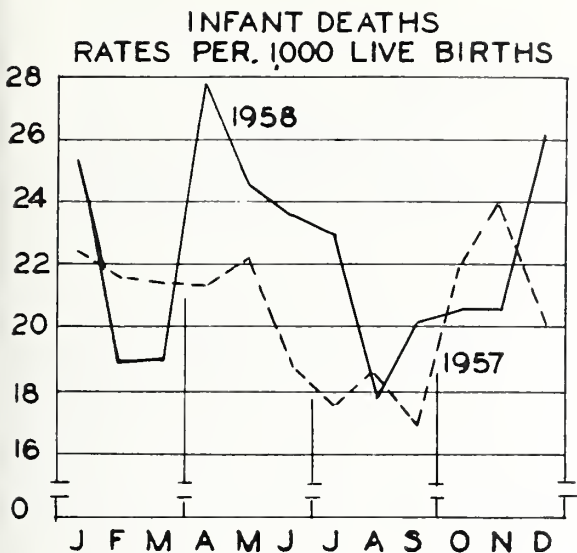
Infant deaths. The infant death rate for Iowa increased appreciably in 1958 as compared with recent previous years. Specifically, the rate for 1958 was 8.3 per cent over that for 1957. This increase was consistent with the regional and national pictures, where the 1958 rates exceeded those for 1957 by 6.2 and 1.9 per cent, respectively.

Although the monthly data were not adjusted to reduce the effect of the changing birth rate, the differences are so large as to preclude the possibility that these changes are solely due to the cumulative effect of artifacts stemming from code revisions, the influence of particular epidemic periods, delay in the transmission of reported data and/or variations in office mechanics.

The rise in the rates for infant deaths is primarily a reflection of the increase in the death rate for infants under one week of age, particularly those who die during the first day of life, where the rate increased from 8.5 per thousand live births to 10.1 per thousand. This was a rise in rate of 18.8 per cent. This degree of change is not reflected in the death rate for infants between the ages of more than one but less than seven days for 1958 vs. 1957, but the increase in the number of deaths in the latter group from 1956 to 1958 was from 4.6 to 5.9 per 1,000 live births, an increase of 28.3 per cent.

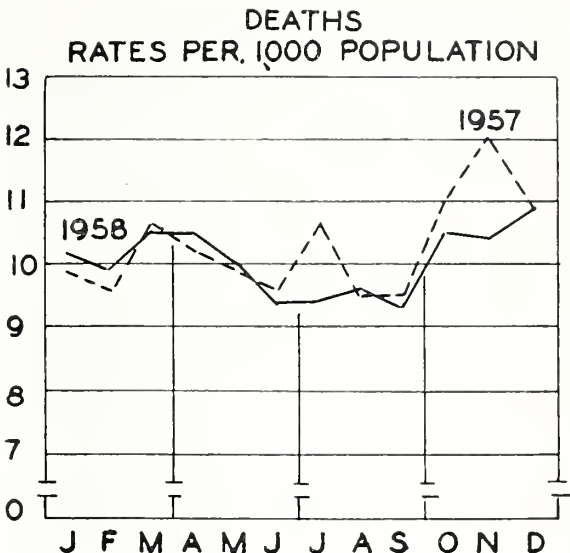
Our data definitely indicated a true increase in infant mortality, but a full explanation for this





phenomenon may not be evident even when the data now being processed are fully explored.

Deaths from all causes. The Iowa picture for total deaths from all causes for 1958 was somewhat more constant than usual, but a generally higher level was maintained through the first nine months of the year than in the comparable months of 1957. The usual last-quarter increase did not attain the amplitude shown for 1957. The radical change in the first quarter 1958 national mortality experience was not reflected in Iowa, and our experience in July contrasted with that of the nation as a whole. Our July increase of 12.1 per cent in deaths per 1,000 estimated population ran counter to the national decrease of 4.3 per cent in rate.



MORBIDITY REPORT FOR MONTH
OF APRIL, 1959

Disease	1959 April	1959 March	1958 April	Most Cases Reported From These Counties
Diphtheria	0	0	2	
Scarlet fever	396	516	226	Des Moines, Johnson, Polk
Typhoid fever	0	0	0	
Smallpox	0	0	0	
Measles	2014	2653	1526	Clay, Kossuth, Polk, Scott, Woodbury
Whooping cough	48	15	5	Iowa
Brucellosis	27	16	7	Story
Chickenpox	851	903	771	Des Moines, Dubuque, Polk, Pottawattamie, Scott
Meningococcic meningitis	1	1	1	Polk
Mumps	262	312	962	Buena Vista, Dubuque, Linn, Scott
Poliomyelitis	0	0	0	
Infectious hepatitis	7	12	62	Clinton, Shelby
Rabies in animals	26	13	25	Jasper, Webster
Malaria	0	0	0	
Psittacosis	0	0	0	
Q fever	0	0	0	
Tuberculosis	29	39	45	For the state
Syphilis	137	73	129	For the state
Gonorrhea	101	58	66	For the state
Histoplasmosis	0	0	0	
Food intoxication	0	68	0	
Meningitis (type unspecified)	1	0	0	Pottawattamie
Diphtheria carrier	0	0	0	
Aseptic meningitis	1	0	0	Poweshiek
Salmonellosis	4	4	2	Polk
Tetanus	0	0	0	
Chancroid	0	0	0	
Encephalitis (type unspecified)	1	1	0	Butler
H. influenzal meningitis	0	0	0	
Amebiasis	1	0	2	Pottawattamie
Shigellosis	1	6	2	Polk
Influenza	29	788	17	Polk

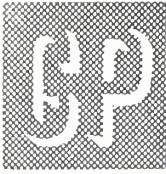
LEAD POISONING FROM DRINKING WATER

Lead piping was implicated as the cause of chronic lead poisoning in three members of a Nebraska family, according to a joint report from the Lincoln-Hastings Medical Laboratories.* The patients, a mother and two small children, all recovered following prolonged therapy.

Since many older houses still have some lead piping that may, under certain circumstances, yield enough lead to poison the consumer, "such a source in poisoning should not be overlooked," the authors warn.

Examination of water samples from other homes with lead piping revealed no toxic concentrations of lead. Factors such as water softness and carbon dioxide content seem to have an important effect on the amount of lead released from the piping, they believe.

* Joliff, C. R., et al.: Lead in domestic water supply. Nebraska M. J., 44:156, (Apr.) 1959.



Iowa Academy of General Practice

ELEVENTH ANNUAL SCIENTIFIC ASSEMBLY OF AAGP

More than 2,700 physicians registered for the Eleventh Annual Scientific Assembly of the American Academy of General Practice, which was held April 6-9 in San Francisco, California. The total registration of over 6,000 included physicians, their wives and guests, and exhibitors. The Assembly was termed a great success, and in addition to an excellent scientific program, the San Francisco weather was perfect.

Dr. Fount Richardson, of Fayetteville, Arkansas, was installed as the twelfth president of AAGP. Dr. John Walsh, of Sacramento, California, was chosen as president-elect; Dr. Floyd C. Bratt, of Rochester, New York, was elected vice-president; and Dr. Albert E. Ritt, of St. Paul, Minnesota, was reelected treasurer. The three newly-elected members of the Board of Directors are Dr. Daniel Rogers, of Wenham, Massachusetts; Dr. Harold W. Salter, of Cleveland, Ohio; and Dr. John O. Milligan, of Seattle, Washington. Dr. James D. Murphy, of Fort Worth, Texas, was reelected to his fifth term as speaker of the Congress of Delegates, and Dr. Carroll Witten, of Louisville, Kentucky, was elected vice-speaker.

The following commission chairmen were named: Dr. Paul S. Read, of Omaha, Nebraska, Commission on Legislation and Public Policy; Dr. J. M. Perkins, of Denver, Colorado, Commission on Hospitals; Dr. Paul Lindsay, of Nashville, Tennessee, Commission on Education; and Dr. Norman R. Booher, of Indianapolis, Indiana, Commission on Membership and Credentials.

The meetings held and the actions taken by the Congress of Delegates are of interest to all general practitioners. It has been encouraging to see the large numbers of Academy members who have visited the sessions, thus showing their interest in the actions of the Congress of Delegates. There are two duly elected delegates from each state or regional chapter that has received a charter. The Iowa Chapter was represented at the San Francisco sessions by Dr. C. H. Stark, of Cedar Rapids, and Dr. Ralph H. Moe, of Griswold.

At its April, 1959, meeting, the Congress spent most of its time discussing educational standards, and it authorized its Commission on Education to

make a continuing study of the subject. Four resolutions requesting action on a Board of General Practice were rejected. Proposals to raise the minimum requirements for membership in the Academy were referred for further study. A resolution was adopted reaffirming the Academy's insistence upon free choice of physician as an essential concept in the providing of good medical care. Strong endorsement was given to the Keogh-Simpson Bill, a measure designed to exempt self-employed persons from the payment of federal income tax on earnings that they invest in retirement annuities. More accurately, it is a tax-deferment proposal. Delegates were encouraged to urge their U. S. Senators to support the Bill. The AAGP Board of Directors were requested to seek closer liaison with the AMA Board of Trustees relative to the appointment of general practitioners to the Joint Commission on Accreditation of Hospitals. The Board of Trustees was also authorized to continue its liaison with the General Practice Section of the AMA.

The Congress directed that standard rules of procedure be established for the transfer of members from one constituted state chapter to another, and that the AAGP Commission on Membership and Credentials provide a standard form for such transfers. The resolution asking for those actions had been introduced by the Iowa delegation.

The Academy's membership roster showed a net gain of more than 2,000 for the year 1958. Dr. Charles H. Ewing, of Philadelphia, Pennsylvania, the twenty-five thousandth AAGP member, was introduced at the Assembly.

In the annual presentation of membership awards, *Iowa was accorded first-place honors*. The second- and third-place states were Utah and Wisconsin, respectively. This was the third time the Iowa Chapter had placed in the top three, and it is the only state chapter to have won all three places in the annual membership awards. It took second in 1954; third in 1957; and first in 1958.

The Annual State Officers' Conference will be held September 26-27 at Hotel Muehlebach, in Kansas City, Missouri.

The Twelfth Annual Scientific Assembly of the AAGP will be held in Philadelphia, March 21-24, 1960. It is not too early even now to be making plans for attending this meeting in Philadelphia.



Woman's Auxiliary News



OUR PRESIDENT SAYS—

My year as your president started out very interestingly with two conferences that I found very stimulating.

On April 24, on the heels of our Auxiliary convention, the Iowa Nursing Careers Committee held a workshop at the McNeal Motel, in Des Moines. The aim of the meeting was to develop a "unified front in nurse education," and the theme was "Our Recruitment Resources and How to Utilize Them in Iowa." The heads of most of the nursing schools in the state were in attendance, all types of nursing education were represented, and our own Mrs. Merillat, as one of the members of the panel, made us very proud by the way in which she explained the work of our Auxiliary in recruitment and in providing loans to students.

On May 2, the Iowa Branch of the American Association for the United Nations met in the beautiful new First Unitarian Church, in Des Moines. Recognizing the deep-seated desire of Iowans as well as of people throughout the rest of the world to live in peace, this organization strives to acquaint people with the workings of the United Nations. Although everyone recognizes that the United Nations is not in itself a solution for all of the world's problems, it offers the greatest hope for peaceful consideration of controversial international issues. The principal speaker was Dr. Frank P. Graham, a former president of the University of North Carolina who has worked for the United Nations ever since it was established. From 1947 to 1950, he was secretary of the council on the Good Offices Committee of the UN on Indonesia, he is a special advisor to the U. S. Secretary of State on Indonesian affairs, and since 1951 he has been UN representative for India and Pakistan. He explained that people were meeting in most countries of the world, just as we were meeting in Des Moines, to discuss identical problems and to find ways of strengthening the UN.

At the morning session there were workshops for the consideration of four problems: the UN and Red China; the UN and economic development; the International Court of Justice; and (the one I attended) the Berlin crisis and the problem of divided states. Dr. Dunner, of Grinnell College,

gave the background material on the last of these topics and led the ensuing discussion. He was in Germany with the Third Army, and did some of the work on the treaty or armistice agreement at the end of World War II. He told of the pressures of the times, and of the situations that resulted in the present division of Germany.

Although in our workshop we who participated were too inexperienced and the problems were too difficult to permit us to make decisions or frame recommendations, the group that discussed international law agreed upon some resolutions. The Bar Association was well represented in that group.

We were urged to acquaint the members of our organizations with the work being done to strengthen the UN, and each of us was encouraged to become an individual member of the Association for the United Nations, or to help enlist organizations in our home counties to join as groups. Members of the ISMS Auxiliary attend meetings of the Association for the United Nations as individuals, rather than as representatives of the Auxiliary.

I shall be attending several other interesting meetings in the future, and I shall tell you about them in future issues of the WOMAN'S AUXILIARY NEWS.

—MRS. E. A. LARSEN
President

STATE WINNERS IN THE ESSAY CONTEST

The prize winners at the state level in the essay contest for high school students this year were Judy Larson, of Elgin, first; Hank Wood, of Des Moines Roosevelt, second; and Janet Carter, of Boone, third. Hank wrote on the advantages of the free enterprise system, and the two girls wrote on the advantages of private medical practice. All three won honorable mention at the national level.

The judges of the state contest were Mr. C. G. Douglass, chief of bureau, Associated Press; Mr. T. A. Stroud, professor of English at Drake University, and Dr. Fred Sternagel. The first prize was \$100, the second prize \$50, and the third prize \$25.

THE AUXILIARY IS ASKED TO HELP

At or before the time that this issue of the WOMAN'S AUXILIARY NEWS reaches the membership, the State Medical Society staff will be starting a project on which it wishes to have help from Auxiliary members throughout Iowa. The undertaking is one that will further the purposes of the Auxiliary as well as those of the State Medical Society.

A copy of a one-page questionnaire is being sent to each doctor of medicine in Iowa—to non-members as well as to members of ISMS—and Auxiliary members are asked to help make sure that all questionnaires are completed and returned.

The questions ask for biographical data—the type of practice the doctor engages in; where he lived before entering medical school; his marital status; and details concerning his medical training and military service. There are no requests for information of a sort that any doctor would be reluctant to give.

For several years, Mrs. Hazel Lammey, the executive secretary of the State Auxiliary, has been compiling biographical information on all Iowa doctors as a part of an Auxiliary project. She has been collecting newspaper clippings on the activities of individual physicians, and her ISMS membership cards contain basic data on doctors who have begun practice comparatively recently. However, she lacks some important information on the doctors who have been members of the State Society for more than half a dozen years.

The State Medical Society's Committee on Legislation and Committee on Rural Health need to have accurate and up-to-date information about the current distribution of physicians, county by county, in order that they can make accurate predictions of the future adequacy of medical care in all parts of the state. In addition, the dean and faculty of the S.U.I. College of Medicine are interested in finding out whether or not considerable numbers of S.U.I. medical graduates who intern or start private practice outside Iowa eventually return here.

Though summer is an awkward time for county Auxiliaries to work as groups, the State Medical Society's staff hopes that individuals in organized chapters and members-at-large in unorganized counties will consent to telephone or otherwise remind doctors who have neglected to return their questionnaire.

Mrs. E. A. Larsen and Mrs. Lammey will get in touch with county Auxiliary officers and members-at-large about this job in the very near future.

SAFETY FIRST

A moment of carelessness can cause a lifetime of regret!

INAUGURAL ADDRESS

MRS. E. A. LARSEN
CENTERVILLE

It is a pleasure and a challenge for me to accept the presidency of our Auxiliary. However, I believe the challenge that this office affords me represents the same challenge that each of you accepts, if you have an interest in your husband's profession and a sense of community responsibility. As your president, I hope I can make the most of my opportunities and can direct the activities of the organization along worthwhile lines.

In these changing times, greater demands are continually placed upon our husbands, and how well we perform our duties will decide whether or not their burdens are lightened. The State Medical Society provides some of the means through which doctors can work for the preservation and strengthening of the private practice of medicine, and our Auxiliary is pledged to assist in those efforts, whenever its help is requested.

A large share of our Auxiliary's programs consist of providing leadership in health education within our respective communities. We are being trained by our organization to do this sort of work, a considerable part of which consists of acquiring and transmitting correct information. As Dean Nelson, of the S.U.I. College of Medicine, so ably expressed it in the April issue of the JOURNAL OF THE IOWA STATE MEDICAL SOCIETY, "There must be more feedback. Knowledge of the truth has no value unless it is communicated."

To me, our Auxiliary is a force that is continually gaining momentum, and I am convinced that those who follow us will succeed in the things about which we are only dreaming today.

One of our dreams concerns organization. We hope that more and more doctor's wives in Iowa will have Auxiliaries to *help us* display a united front, and to *help them* enjoy "togetherness" and companionship with women of similar problems, aims and goals.

Health education and preventive medicine—another dream—is demanding more and more time from our husbands. There, may lie one of the solutions to the continuously increasing cost of medical care that the public is discussing so much today. As wives of physicians, we are informed lay people, and can do much to "jell" the ideas and newer concepts of health in our civic organizations.

In addition, we can be leaders in the formation of attitudes on subjects that are no more than indirectly connected with medicine. During the population explosion that will occur within the next few years, education of all types will give us concern. Personally, we are concerned about making sure that colleges and universities continue to provide opportunities for our children.

In our safety program, our Auxiliary is interested in securing competent driver training for all high school youngsters. In our civil defense program we are interested in educating ourselves and the public about the means of protecting and caring for people in case of attack or natural disaster.

We have still other objectives. We want to recruit more and more young people for the health care professions, offering loans to those of them who cannot finance training for themselves. And by continuing to collect funds for the American Medical Education Foundation, we shall do our part toward maintaining the quality of medical education and toward keeping our medical schools free of federal control.

Thus, I accept the challenge that has been given me in the same spirit that most of you are accepting similar challenges daily. There are many things to be done in the future, and with your help I will do my best to accomplish them.

**Mrs. H. C. Merillat's Report to the
ISMS HOUSE OF DELEGATES
April 19, 1959**

For those of you who are unacquainted with the Auxiliary's program, I should like to describe briefly some of the activities in which our organization is engaged, under the direct guidance of state and county medical societies.

We are proud of our nurse recruitment program which has been going on for several years. We sponsor Future Nurse Clubs in high schools throughout Iowa to interest young women in nursing as a career. We maintain a loan fund to give financial assistance to worthy girls interested in such work. A highlight of this program is the annual conference of Future Nurse Clubs during which the girls are taken on conducted tours of nursing schools and are addressed by student and graduate nurses and nursing instructors. This year we are inaugurating our first statewide conference for directors of nursing education and high school career councilors. The proceeds from the benefit dance that the Auxiliary sponsors at each ISMS annual meeting will help support our loan fund.

In the field of preventive mental health, the Auxiliary has sponsored "Milestones to Marriage" in social science classes in high schools. These materials consist of a series of nine monthly letters that we supply as the basis for the study of this aspect of life problems. They are being used in over 50 high schools, in several nurses' training schools, at Drake University and in various church groups.

We have encouraged contributions to the American Medical Education Foundation. To help raise

money for that organization, we have sold note paper artistically designed by one of our own members.

Since 1946, we have sponsored annual handicraft sales in several places throughout the state. Items made by physically handicapped adults are sold, and the full sale price of the product is returned to the maker.

We have informed our membership about legislation pertaining to health, in accordance with the direction of the ISMS Committee on Legislation. We have actively cooperated with other committees of the State Medical Society when our help was requested. In general, I would say that our whole program has been in the field of public relations.

I should like to emphasize that the Auxiliary undertakes no project without the prior instructions or approval of a state or county medical society.

At the present time, we have a membership of over 1,000 doctors' wives. We have chapters in 41 counties, and have 91 members-at-large in unorganized counties. In the counties where we have no organizations, I hope doctors will take time to consider the advantages of having chapters established. We think you will find that an Auxiliary could do a great deal to help you.

I should like to express my personal appreciation and to convey the thanks of the officers and members of the Auxiliary to the Iowa State Medical Society for its guidance and support during the past year.

—MRS. H. C. MERILLAT

COUNTY AUXILIARIES

Fayette

Prizes of \$100, \$50, \$25 and \$15 for first, second, third and fourth places, and \$10 awards for each of 11 "honorable mentions" in the Fayette County Medical Auxiliary's essay contest were provided by the Fayette County Medical Society, the Interstate Power Company, the Iowa Electric Light and Power Company, the First National Bank of Oelwein and the First National Bank of West Union. In addition, President E. E. Garbee announced that Upper Iowa University will provide matching college scholarships for the top two prize-winners.

Lee

The Lee County Medical Auxiliary and the sisters at the Sacred Heart Hospital entertained

Fort Madison doctors at breakfast on March 30, Doctors' Day. The Auxiliary's committee consisted of Mrs. George McMillan, chairman, Mrs. Lyle Adams, Mrs. Raymond McIllece, Mrs. W. C. Kesten, Mrs. Frank Richmond, Jr., and Mrs. A. C. Richmond.

Mahaska

The Woman's Auxiliary to the Mahaska County Medical Society entertained the doctors at a dinner on March 31 at the Elmhurst County Club, in Oskaloosa. The highlight of the affair, held to commemorate Doctors' Day, was a skit entitled "To Tell a Lie" and patterned after the television show "To Tell the Truth." The participants were Mrs. Ellis Duncan, Mrs. Keith Campbell, Mrs. Leroy Catterson, Mrs. Kenneth Lemon, Mrs. George Atkinson, Mrs. Joseph Lederman, Mrs. Sidney Smith, Mrs. Robert Alberti and Mrs. Robert Collison.

Polk

The Polk County Medical Auxiliary met for its May Brunch at the Wakonda Club on May 8. Mrs. John Bakody presided at the short business meeting, and the installation of new officers followed. They are: Mrs. Louis Goldberg, president; Mrs. F. C. Coleman, president-elect; Mrs. Charles Gutenkauf, first vice-president; Mrs. Louis Noun, second vice-president; Mrs. James Dickens, recording secretary; Mrs. Henry Decker, corresponding secretary; Mrs. G. A. Kern, treasurer; and Mrs. E. A. Vorisek, auditor.

The program provided delightful entertainment for all as Auxiliary members performed hilariously as musicians, dancers, etc.

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Proceeds will be donated to the American
Medical Education Fund

COMMUNITY HEALTH SERVICE AWARD

The Woman's Auxiliary to the Iowa State Medical Society chose a Sioux City woman, Mrs. A. M. Davis, to receive its 1959 Community Health Service Award. The presentation was made by Mrs. R. H. Moe, of Griswold, during the Annual Convention at the Savery Hotel, in Des Moines, on April 21.

Selected from a group of seven candidates, Mrs. Davis is the fourth recipient of the honor. She has been active in the Woodbury County Red Cross Chapter for more than 40 years, having started her volunteer work in it while she was still a school girl. In 1950, she reactivated the Red Cross Grey Lady service, and was its chairman for seven years. In 1957, she was appointed chairman of the office of volunteers for the county Red Cross chapter, has been a member of the chapter's board of directors since 1944, and of its executive board since 1957.

In addition, Mrs. Davis has been active in the social service department of the Jewish Federation in Sioux City for more than 30 years. She also served as co-chairman of the child care committee of the Council of Community Services, and last year worked with the study committee of the Siouxland Association for the Mentally Retarded.



Mrs. A. M. Davis

WOMAN'S AUXILIARY TO THE IOWA STATE MEDICAL SOCIETY

President—Mrs. E. A. Larsen, 323 Oak Street, Centerville
President-Elect—Mrs. R. F. Nielsen, 919 Washington Street, Cedar Falls
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An Industrial Commissioner Views Workmen's Compensation Problems

EARL R. JONES

OSKALOOSA

BECAUSE I AM a lawyer, rather than either an industrialist or a physician, what I shall say about the problems of industrial medicine will deal with their legal and social aspects, rather than with those on which only industrial employers or physicians are qualified to speak.

First, let's look at the development and present status of workmen's compensation legislation. The greatest single advance in the field of workmen's compensation since the passage of the original acts in 1911 has been the liberalization of the laws governing the medical care to which injured workers are entitled. At the outset, employers either were not specifically required to provide medical care and treatment, or were required to provide them for only relatively brief periods or up to rather modest dollar maximums. Today, the laws of 35 states, the District of Columbia, Hawaii and Puerto Rico require that employers shall provide full and unlimited medical benefits. In the remaining 14 states, either time or dollar limits are still in effect, the former ranging from 60 days in Virginia to four years in Alaska, and the latter ranging from \$300 in South Dakota to \$2,500 in Kansas, Kentucky, Vermont, Montana and Iowa. During 1957, the legislatures of 12 states improved various medical benefits. Thus, the quality and quantity of medical care available under workmen's compensation has been increased over the years, but as I shall point out later, the provisions are still less generous than labor would like to have them.

THE QUESTION OF FREE CHOICE OF PHYSICIAN

Now as regards the quality of medical care available. In his treatise "Medical Care and Rehabilitation Under Workmen's Compensation: Present Status and Critique," Jerome Pollack, an outstanding authority in this field, states: "The overriding problem is lack of organizational controls on quality. There is little supervision by the industrial boards and commissions." Then, noting the tremendous growth of voluntary health insurance in the United States, and particularly in industry, he further observes: "Splitting care into occupational and non-occupational compartments reduces the quality of care, as either program alone is incomplete, and general medical care often misses the occupational origin of the disease."

This compartmentalization results from the fact

that the worker is permitted to choose his physician under the non-occupational voluntary insurance plans, whereas three-fourths of all the people covered under workmen's compensation programs in the United States can have their medical bills paid for them under those arrangements only if their physicians are ones whom their employers or their employers' insurance carriers have designated.

Until rather recent times, the large medical associations have been vigorous proponents of free choice of physician in other sorts of cases, but have been strangely silent about free choice of doctor for the injured industrial worker. That silence persisted for decades.

Without question, the greatest exponent of reform in workmen's compensation programs is the International Association of Industrial Accident Boards and Commissions, an organization of which the Iowa Industrial Commission is a member. Almost all of the workmen's compensation administrators in the United States, Canada, Puerto Rico, Hawaii and the District of Columbia participate in formulating its policies. This large, well-informed organization suggests, "Ideally, the claimant should have free initial choice of the physician who treats him." But the Association goes on to say, "The workmen's compensation agency should be given authority to supervise and control medical care. We must recognize that unrestricted free choice without proper medical supervision can result in a poor quality of medical care."

From the medical viewpoint, the most serious difficulties in industrial medical care have been thus summarized by the AMA Council on Industrial Health and the Illinois State Medical Society in MEDICAL RELATIONS UNDER WORKMEN'S COMPENSATION IN ILLINOIS: "The principal weakness in quality of care appears to arise out of the care immediately following the injury. Ignorance of pathology, professional pride, production requirements and misguided efforts to keep costs down are the principal contributing factors. There are too many supervisors reluctant to refer the employee to the medical department; too many nurses who consider themselves qualified to practice medicine. Perhaps the greatest fault of all is with the doctors who do not acknowledge their own professional limitations. As a result, cut tendons, fractures and foreign bodies are overlooked; infections occur; head and internal injuries, particularly following falls, are treated asymptotically, without a careful in-

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quiry into more serious and complicating issues."

The foregoing, I hasten to emphasize, is an analysis and criticism published by an important segment of the medical profession, and is not my own opinion. If justified, it puts the spotlight upon a difficulty for which physicians must find the answer.

It has been the policy of the Iowa industrial commissioner's office for many years that in the first instance the choice of physician should be the employer's, inasmuch as Iowa law requires him to furnish adequate and proper medical attention and pay for the same. Thus, the operation of an industrial plant—large or small—without some type of medical department minimizes what otherwise might be a medical advantage. "What's that?" you ask. Yes, I said "a *medical* advantage" in having the employer or the insurance carrier choose the physician. When an industrial injury occurs, it is in the interests of both employer and worker to have a doctor on the spot as promptly as possible to provide competent supervision of the care given the injured worker. And he neither will be there nor will have established a safe routine for first aid to injured personnel unless the employer has made a previous arrangement with him. If there is a plant doctor, minor cuts, scratches, abrasions and sprains can be promptly and properly attended to, and serious complications most times avoided. Infections can be held to a bare minimum. When major injuries take place, proper medical assistance can be obtained quickly, and the continuing care can be properly supervised. Otherwise, all too often, a minor on-the-job injury can go undetected, or more serious ones can remain completely unknown to the employer, until large medical bills have accumulated. In addition, on-the-scene medical departments or nearby centers can materially reduce, if not entirely remove, the problem or question of unauthorized medical attention.

THE IMPORTANCE OF PROMPT REPORTING OF INJURIES

One of the important and most often overlooked factors in industrial injury cases is prompt reporting. Strict discipline as regards workers' presenting themselves at a medical center following an accident can avert a multitude of later problems. There, the extent of injury can be determined by qualified personnel, the history of the accident or injury can be recorded, and the major subjective complaints of the patient can be listed. A determination can be made as to whether or not the worker should return immediately to his task, or whether he should be sent to a hospital or to a specialist for further attention. Too often, zealous, production-minded supervisors have sent men back to work, with the result that an otherwise minor injury has been aggravated and complicated, and expensive and prolonged medical treatment has been necessitated.

The industrial commissioner's office gets frequent

complaints regarding injuries that appeared simple and minor at the time of their occurrence, and for which immediate treatment was judged unnecessary. Such stories follow a typical pattern. After the injury, the worker leaves the plant at the end of his shift, develops pain or discomfort later, and seeks medical advice and aid. The employer learns of that treatment only when the doctor's statement comes to him in the mail. In such instances, the employer has no records of the accident and has no way of knowing whether or not it was for an on-the-job injury for which the employee sought medical attention. Proper reporting and medical attention at the plant could have averted the subsequent unpleasantness. These, then, are some of the reasons why industrial medical services are essential to labor-management peace.

Every on-the-job personal injury can be the basis for litigation. Contested claims for compensation don't always reach trial, but each year there are 100,000 of them in courts of original jurisdiction and an estimated 40,000 of them in appellate courts. Thus, "possibility" approaches "probability." In Iowa each year, the employment injuries resulting in seven or more days of disability number 14,000 and approximately 400 of these result in claims that reach the arbitration or review-reopening levels.

In such cases, records carefully compiled by competent personnel can become of major importance. On such evidence, the nasty problem of whether an injury was reported either to the employer, to his insurance carrier or to the industrial commissioner can be quickly and accurately determined. Affirmative defenses will have been efficiently recorded such as violation of safety rules or a company regulation, intoxication, or horseplay with fellow employees. The names and comments of fellow employees who were near the scene will have been written down, and it will be possible to compare their original statements with those they give when they are called as witnesses. All of these matters can be handled from the medical center at the very time when medical assistance is being provided to the accident victim. Only by such means can either a review board or a court decide with any degree of certainty whether a claim is spurious or meritorious. In these ways, an efficiently-run industrial medical service can save an employer hundreds of dollars in legal expenses and insurance premiums.

GOOD INDUSTRIAL MEDICINE PRESERVES LABOR PEACE

Closely interwoven with the medical problem is the necessity of maintaining good labor relations. As everyone knows, unions are becoming more and more concerned about workmen's compensation problems and are most interested in the interpretations put upon the pertinent statutes. Generally, they are not too well satisfied with the provisions that prohibit workers a free choice of physician. They feel that many times company

doctors are unsympathetic with the employee—are too management-conscious, concerning themselves more with the achieving of production records than with providing adequate medical attention. Indeed, in a few instances they feel that the medical personnel provided by the employer are unqualified to administer the needed care, or have been neglectful in their attentions to injured workers. Whether or not they are justified in coming to those conclusions, labor-management relations are disrupted. Thus, prompt, adequate and competent medical treatment can do much to prevent friction in labor relations, and the establishment of well-equipped and properly staffed medical services is the ideal first step toward that objective. Although the costs of maintaining such centers is of paramount importance, if their establishment lessens labor strife and the consequent slow-downs or even strikes, the money will have been well spent.

THE STATES ARE IN DANGER OF LOSING CONTROL

Another problem much more complex and less evident is uppermost in the minds of those of us who are most closely concerned with the workmen's compensation laws. Of all the major fields of social legislation, workmen's compensation has been most neglected for many years. After an early and promising beginning, these statutes have languished in the mire of legislators' indifference for several decades. At the federal level, meanwhile, social legislation has progressed in rapid strides, causing many union spokesmen to call for federalization of all workmen's compensation programs. At the beginning, workmen's compensation at the state level was no more than a compromise. The employee gave up his right to sue at common law, and the employer gave up certain legal defenses. The employee was to receive two-thirds of his basic salary for specifically defined injuries. A speedy, summary, inexpensive tribunal was created for such determinations, unbound by the strict rules of evidence and of law.

Having appealed unsuccessfully to the various state legislatures for more realistic benefits and having seen jury awards in personal injury suits exceed by many times the allowances permissible under the compensation law, labor organizations are now asking whether or not the workmen's compensation laws really were bargains from their point of view. The inadequacies of today's benefits are further highlighted by the great gains made in private insurance, pension and general health plans. Frustrated by legislative inactivity, the labor organizations have sought relief through the collective bargaining process, until nowadays workmen's compensation is greatly supplemented if not virtually supplanted by the fringe benefits in union contracts. During 1955, as a matter of fact, employers as a group in the United States were spending 0.7 per cent of their payrolls for workmen's compensation, but 2.0 per cent for private

employee insurance coverages to supplement workmen's compensation benefits. Thus by indirection, labor has attained that which it could not realize by direct attack, but it has achieved its objective at greatly increased costs to industry!

All of us realize that the farther away from our own locality we must go for relief and guidance in our problems, the more complex and involved those problems become. Since 1911, workmen's compensation has been an exclusive concern of the states, and the federal government has not interfered in it. This arrangement was largely the result of the diversity of problems arising in the various states. Problems of the heavily industrialized states differ drastically from those of the highly agricultural ones. Rates of compensation, medical benefits, even scheduled losses are not always uniform. An invasion of this field by the federal government will not necessarily bring about equalization, reduced costs or more effective administration. In our American way of life, it is strange but true that respect for authority varies in *indirect* proportion to the distance between administration and the local problems involved. There is a growing contention that workmen's compensation benefits should be established on a life pension plan, and that medical benefits should be unlimited and for life. We may be faced with specific proposals to that effect sooner than most of us imagine possible.

With the establishment of eligibility for total-disability benefits under Social Security at age 50, the federal invasion of the compensation field has already begun. It certainly would not be too long a stride for the ever-increasing Social Security payments to exceed workmen's compensation benefits of many states within the next few years, and thus to engulf such programs and make them meaningless.

Industries today can no longer bury their heads in the sand—they can no longer allow the indifference of legislatures to keep workmen's compensation programs obsolete. Labor organizations currently are beset by many difficulties, but they won't fall to pieces or lose power appreciably. On the contrary, in my humble opinion, they will emerge stronger and more vigilant than ever. Thus, if we are to maintain our present system and if we are to go on controlling medical care and treatment through state workmen's compensation statutes, we can no longer stand still. We must move forward boldly, quickly and decisively.

You may rightfully ask what we can do to keep the administration of workmen's compensation at the state level and still not incur tremendously increased costs—how, in other words, we can preserve the basic concept of workmen's compensation, that industry should bear the costs of its own injuries. Though perhaps somewhat more critical than it was a decade ago, the outlook is far from hopeless. Management, labor, insurance carriers, medical men and workmen's compensation ad-

ministrators all must strive toward their common goal—realistic, adequate and equitable benefits and medical care for injured workers. Much remains to be done, and much can be done, to lead workmen's compensation, the first major social insurance program of the twentieth century, to fruition.

SOME SUGGESTIONS TO DOCTORS

In the light of your collective experience, you doctors know better than I what, specifically, can be done, but it seems to me that our efforts should be channeled in three directions:

First, by expanding and improving industrial medicine, you must make yourselves as indispensable as possible to large numbers of workmen. It is the long-term, seriously injured worker who is relatively neglected under most programs. Here is an opportunity for you to fill an important gap by a change in emphasis. Providing effective coverage for such workers may require some adjustment in present financing arrangements, but there is nothing sacrosanct about them. We are the only major nation in which attempts are made to allocate costs precisely in accord with the charges attributable to particular employers.

Second, you doctors can strive to excel in rehabilitation. This should be the culmination of all industrial medical programs, the real heart of medical care. This is the sort of work that returns the injured worker to gainful employment, and without it, the man's life is relatively empty and lacking in satisfaction. With it, your job is really done!

Third, you can investigate and analyze just how your workmen's compensation medical care and benefits compare with benefits for non-occupational disabilities under private employee benefit plans. Is there really a tendency for injured workmen to make claims for the latter rather than for the former, simply because they appear more attractive? What happens to recipients who exhaust their rights, either cash or medical? What is happening

to the injured worker's family? Are his wife and children able to subsist on present-day benefits, or if not, how are they making ends meet? You will need accurate information on these matters as well as the answers to many other basic questions if you are to proceed effectively, or even to know where nothing needs to be done.

Am I advocating that you become "your brother's keeper?" I don't know. But I firmly believe that you must be concerned with your brother's welfare unless you want to wait to be *legislated* into becoming his keeper!

CONCLUSION

Although I regard the situation of workmen's compensation as serious, I am hopeful about the final outcome. Workmen's compensation is a sound approach to the problem posed by occupational disabilities. Within the present framework, it is possible to bring to bear on the problem of work injuries an integrated program of high-quality medical care—rehabilitation as well as injury prevention. Thus, workers can be provided the full benefits which long ago became justified.

The problems are not insuperable or beyond your capacities to resolve—either through increased numbers of medical centers or through the establishment of new medical departments. All of us are following on the heels of the pioneers in this field. Indeed we are still pioneers ourselves. But today bold vision of the future is required of us. We must run fast if we are merely to stand still!

The injured industrial worker, no less than the disabled war veteran, is one of our responsibilities. Caring for him should be a part of our national creed.

If I have taken poetic license with my assigned subject, I apologize. The problems of the injured industrial worker are so interwoven in my thinking that I cannot confine my thoughts to a single portion or aspect of them.

Short Course in Occupational Medicine

New York University is offering a full-time, two-month course in occupational medicine, September 14 through November 6, 1959. The charges for tuition and field trip expenses will total \$400.

The course is designed for physicians engaged full-time or part-time in the practice of medicine in industry. Didactic instruction will be supplemented by field trips to industrial plants, to governmental agencies concerned with occupational health, and to union health centers. Opportunities will be given for the registrants to attend medical, surgical and clinical pathologic conferences held at the NYU-Bellevue Medical Center.

The major topics to be covered during the two months include (1) preventive medicine, (2) administrative medicine, (3) occupational diseases, and (4) industrial hygiene. Each of them will be presented in a great deal of detail.

Living accommodations are available in single rooms or suites at the NYU-Bellevue Medical Center's Hall of Residence. For further information and application blanks, address: Office of the Associate Dean, New York University Postgraduate Medical School, 550 First Avenue, New York City 16.

Health Hazards From Agricultural Chemicals

CLYDE M. BERRY, Ph.D.

IOWA CITY

FOR SOMEONE STEEPED in the traditional concepts of farming, it may be difficult to understand how a concern over agricultural chemicals can be an item on the agenda of an industrial health conference. In defense of the appropriateness of such a discussion, I offer the premise that farming as it is now practiced in Iowa has close parallels with industry. The trends indicate that the similarities will increase.

1. The profit motive in farming is becoming increasingly obvious. Farming is growing to be less a way of life and more a way of making a living.

2. Production is readily recognized as the integrated performance of a production entity (the farm), capital (operating funds), labor and management (the farmer constituting both of these). There is a growing emphasis on every scientific approach that will increase production, improve quality or minimize the influence of natural elements.

3. The customer's desires take precedence over the personal preferences of the farmer. The farmer may like brown eggs, but he produces white ones. He raises meat-type hogs, grows small tomatoes that can be packaged easily, and employs insecticides with a residual life in keeping with his marketing plans.

4. Criteria for performance have changed from a consideration of the amount of money which will remain at the end of the year, to a carefully performed cost accounting. The farmer now calculates feed cost per pound of beef, return on investment, amortization rates and tax advantage.

5. Capitalization per person is one of the highest for any occupation. Efficient use of this capital is reflected in a trend toward larger farms, a higher degree of mechanization, a tendency toward spe-

cialization in product, and greater utilization of specialized services.

Farm chemicals fit perfectly into the industrial concept of farming. Currently, they can be appraised on the economic basis mentioned above: more product, a better product and less cost per unit.

At some future time, the total food supply available for our burgeoning population will become critical. It is an obvious conclusion that the future use of farm chemicals will go in one direction—up! There will be an increase in the varieties as well as in the amount used.

ILL EFFECTS HAVEN'T BEEN ASSESSED

Toxic manifestations are usually related to the severity of an exposure, its duration, individual susceptibility, portal of entry and other factors. The amount of material required to produce a physiological effect, when the above variables are controlled, becomes a measure of *relative* toxicity. Animal experimentation, manufacturing experience in particular plants, and data on accidents and suicides indicate that one might logically expect illnesses to develop among the farm users of chemicals. Yet, there is very little evidence that they are occurring. Conley¹ states: "The incidence of injury from economic poisons (pesticides) in the United States has been extremely difficult to determine. Facts are meager and unavailable from any single source. Nation-wide mortality statistics are annually published only on the more familiar pesticidal chemicals, such as arsenic, strychnine, cyanide and the fluorides. California is the only state which annually publishes a detailed tabulation of non-fatal injury from economic poisons. Until recently only a fragmentary picture of the incidence of occupational pesticide injury was available from the remainder of the nation."

What possible explanations might be considered

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for the lack of reported cases of poisoning from farm chemicals? Several can be listed:

1. Farmers are not being made ill.
2. They are being made ill, but are not seeing physicians.
3. They are being made ill and are seeing physicians, but the causes of illness are not being diagnosed.
4. They are being made ill, they are seeing physicians and the etiologies are being diagnosed, but case reports are not being published in the medical literature.

It seems likely that the answer lies in the latter three of those possibilities. Long and Walden² have reported that over half of a small group investigated in Iowa believed they had been adversely affected by farm chemicals at one time or another. I, myself, have asked for a show of hands at a meeting of farmers, and approximately one-third of those present indicated that they were quite sure farm chemicals had made them sick. They felt that their illnesses had satisfied the following criteria:

1. The illness was time-related to the exposure.
2. An association could be made on the basis of invariable response following use or exposure conditions believed to be excessive.
3. Only exposed people suffered the effects described.
4. The effects were compatible with what they knew the physiological effect to be.

None had seen his physician. One might therefore question the accuracy of the "diagnosis" that a specific farm chemical had produced the illness. Yet the farmer defends his self-diagnosis (and sometimes therapy) on the grounds that he knows what caused his difficulty. He knows what supportive measures to take, if any; his medicine chest contains the helpful medicinals; and his experience enables him to provide a satisfactory prognosis. Why, he asks, should he see a physician? Rest at home will do him more good, he thinks, than would a drive into town to see a doctor.

THE DANGERS ARE NONETHELESS REAL

If the above is more generally the procedure than has been realized, then concern may logically be expressed over problems such as the following:

1. The farmer can identify acute response, but how does one detect the chronic?
2. How, in a farm setting, can measurable parameters of exposure and response be evaluated?
3. If the farmer is both management and labor in his operation, how can he be provided with personal protection programs? Where can he purchase safety glasses or respirators? Where is the eye fountain or the safety shower? Can he be induced into bathing at the end of each exposure period and into wearing clean clothing daily?
4. Where can he get specific counsel on his individual at-the-site problems? From the limited and

overburdened occupational health service of the State Health Department? From his local health department? From the Farm Extension Services? From the supplier?

5. What should be done now to meet the problems that will increase in variety and severity as the farm use of chemicals increases in variety and amount?

To the uninitiated, a brief introduction to the kinds of chemicals that the farmer encounters may be helpful. It should be kept in mind that the farmer is growing things—plants and animals. His use of chemicals should represent a careful choice of substances that are known to have some effect on life processes, and if so, there is a fair likelihood that some or most of them will have some effect on his own protoplasm.

MAIN TYPES OF FARM CHEMICALS

Farm chemicals fall roughly into the following groups:

1. *Insecticides*. These are varied in type, degree of effectiveness, and permissible residual in or on food products. Metallic compounds such as those containing arsenic have been used for a long time. There are chlorinated insecticides such as DDT, lindane, chlordane, aldrin, dieldrin, toxaphene and others. There are organic phosphate compounds such as parathion, malathion, diazinon and phosdrin. Insecticides are applied topically to the plant and to the animal. A growing group are the systemic insecticides that are taken up by the plant or animal. They are applied as dusts, sprays and dips.

2. *Herbicides*. There are a great variety of such materials. Some are inorganic, as for example the chlorates. Some are petroleum distillates of high aromatic content. Specialty chemicals such as dinutrophenol and pentachlorophenol may be employed. Selective activity may be important, as in 2-4-D and 2,4,5-T. Gibberelic acid has particular uses of a selective nature. So does maleic hydrazide. Chemicals can cause fruit to set. They can be used for thinning. They can sterilize the soil either for one season or for several years. As defoliants, they can simplify the harvesting of soy beans or cotton.

3. *Rodenticides*. The actual destruction by rats and mice of foodstuffs on the farm is substantial, and is sometimes estimated to cost as much as \$30 per rat. Product downgrading invariably follows a heavy infestation. In fighting such losses, chemical warfare is essential. It may involve phosphorus and thallium compounds, fluorides, dicoumarol, thiourea and others. All have an inherent toxicity for warm-blooded animals.

4. *Fertilizers*. These may represent a substantial accident hazard, as with anhydrous ammonia. The quantities involved are substantial. The nitrogen may be combined, as in nitrates, urea and cyanamide. They may be acid or basic in reaction and thus constitute primary skin irritants. Trace ele-

ments may be added, such as boron, vanadium, chromium and others.

5. *Fungicides*. These may be used in seed grain treatment as a pre-emergent step toward a better stand or a faster start. Others may be used periodically in spraying and dusting operations to provide growth protection or to insure quality fruit. Organic mercurial compounds are so employed. There is a growing list of newer organic fungicides.

6. *Fumigants*. To control insect infestation in stored food products, a highly volatile, effective material is desirable. Almost all are quite toxic. These include such materials as hydrogen cyanide, methyl bromide, carbon disulfide, carbon tetrachloride, ethylene dichloride, trichloroethylene and others.

7. *Pharmaceuticals*. These materials, toxic and sometimes sensitizing, pose a unique problem. Many of them come to the farmer mixed in feed, feed concentrates, animal salt or similar materials. He purchases many over-the-counter at his local cooperative, hardware store, grocery store or drug store. He can order them by mail. He can buy:

a. Antibiotics for mastitis control (and the penicillin may thereafter appear in the milk) or to be used as a feed additive. Some animal "starter" feeds may contain in the range of a kilogram per ton of broad-spectrum antibiotics. Proprietary antibiotics are sold to prevent or cure almost any animal malady that the farmer can recognize or has heard about.

b. Live virus—for animal vaccination such as cholera.

c. Growth promoters—as diethylstilbestrol.

d. Vermifuges—as phenothiazine, piperazine citrate and others.

e. Tranquilizers—for less loss from shipping fever, greater tractability and increased growth.

8. *Construction and Maintenance Chemicals*. A list of these would be almost infinite. It would include cement and lime; sulfuric and hydrochloric acids; plastic monomers, catalysts and inhibitors; paints, paint-thinners and paint-removers; degreasing solvents; oils and greases.

NON-FARM PEOPLE MAY BE AFFECTED

It is appropriate that the attention of those professionally concerned with occupational health in Iowa be directed to several corollary areas. One problem is the commuting farmer. The executives of one large industry told me that their seasonal peak labor requirements are met from such a population, and that these people come from substantial distances, 10 per cent traveling more than 50 miles one way. Most of these people continue to farm, doing their farm work at night with the aid of tractor lights, over the weekends, etc. Chronic toxicity can affect a part-time farmer's industrial performance.

Another question relates to long-term leaching effects of long-lived farm chemicals, their decom-

position products or their metabolites, into potable surface water supplies, especially impounded reservoirs. Many Iowa communities take their water supplies from reservoirs whose watersheds are actively farmed. This may affect the city plant worker and his family.

A third question relates to residuals on and in food that is locally consumed—i.e., not offered in interstate sale. Federal controls are thus bypassed. Can each community be sure that penicillin is not in its milk supply? Overzealous producers may exceed the recommended dosage levels of farm chemicals, and as a result the concentrations reaching the consumer may exceed FDA-permitted tolerances. Or, the product may be marketed without the full waiting period after treatment. This, too, may affect the city plant worker and his family.

SUMMARY

There are some fitting conclusions that may be drawn with respect to the use of chemicals on Iowa farms:

1. The number and variety of these chemicals are already considerable and can be expected to grow.

2. Illnesses are currently being experienced, but are not medically authenticated.

3. The parallel between farming and industrial operations is substantial and is growing. Less comparable are the preventive measures for exposed personnel in the two groups.

4. Help can be provided in the safe use of farm chemicals through an extension of the interest and skills of industrial medical and paramedical personnel—private and government—into this area.

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DISEASES OF ANIMALS TRANSMISSABLE TO MAN

As a result of a number of preliminary meetings of physicians, veterinarians and public health officers in 1957 and 1958, it has been decided that gatherings of that sort should be held annually in this section of the country.

This year's meeting, the Second Midwestern Interprofessional Conference on Diseases of Animals Transmissible to Man, will be jointly sponsored by the S.U.I. College of Medicine and the Iowa State Department of Health, and will be held in Iowa City on September 10 and 11.

The subjects to be covered include brucellosis, rabies, leptospirosis, Q-fever, staphylococcal diseases and others. The presentations, made by veterinarians and physicians, will emphasize the practical public-health aspects and the recent advances that have been made.

Industrial Hygiene

with special reference to Potential Hazards in Ferrous Manufacturing

FRANK J. WAGNER, B.S.M.E.

MOLINE, ILLINOIS

SOME PLANTS DO not have formal industrial hygiene departments, but it is obvious that some one individual or perhaps several persons in each of them assumes at least a few of the duties and responsibilities incident to industrial hygiene. I should like briefly to cover some of the functions of a formal industrial hygiene department, and then take up some of the probable health hazards in the type of industry with which I am most familiar.

The purpose of industrial hygiene is to recognize, evaluate and control all conditions that may impair the workers' health. Without instrumentation, accurate evaluation is impossible. There are certain visual signs, however, which will indicate whether there is a strong possibility of hazard in particular operations. These signs will be mentioned later.

KINDS OF INDUSTRIAL HYGIENE SURVEYS

Formal surveys are of three types: preliminary, visual and quantitative.

Preliminary surveys are of the question-and-answer form, are sent by mail and are intended to determine whether or not a visual survey of the plants is needed. This type is used effectively by insurance companies or by manufacturing concerns having widely scattered facilities. Analysis of data collected by experienced personnel will indicate the potential hazards in each plant. This type of survey is used by industry at the initiation of an industrial hygiene program to determine the magnitude of the potential hazards, and later on to find out whether additional hazardous materials have been introduced since the initial survey.

Visual surveys are made by management representatives and employees each time they pass through the shops, and it is because of their questions or complaints that many quantitative surveys are instituted. The industrial hygienist makes use of the visual survey to determine the instrumentation required to serve as a basis for estimating the time and manpower needed for a quantitative analysis of the areas in question. Certain hazardous materials used in the shop have a characteristic odor that will indicate the need for exhaust ventilation or some other sort of control.

These odors can be traced to their source, and necessary surveys and control measures can be initiated.

Quantitative analysis is by far the best survey method. By such means, we can obtain environmental concentration data through standard testing procedures—technics that can be duplicated later for purposes of comparison.

Years ago, there was much guesswork or many hours of laboratory analysis required for even the common contaminants. Today, because of demand by industry, there are many standardized instruments that will analyze concentrations of contaminants in the field. As yet, there aren't instruments for measuring all contaminants, but each year new devices are introduced.

A rather complete review of available instrumentation is to be found in *THE ENCYCLOPEDIA ON INSTRUMENTATION FOR INDUSTRIAL HYGIENE*, published by the University of Michigan.

To be of use to management and employees, industrial hygiene survey reports must be issued as soon as possible. Surveys are occasionally initiated through employee-employer relations, and I know of no management that will require employees to work in an unsafe environment. Therefore, to provide best service, reports should be issued as soon as possible.

I believe that any safety or industrial hygiene program can be sold if the facts show the need for such a program. For example, the employees in a welding department may need to be shown the need for placing work properly in relation to the exhaust hood. There is a marked increase in the concentration of welding fumes in the breathing zone of the operator when he positions himself between his work and the exhaust hood, or when his work is between him and the exhaust hood.

As a basis for an estimate of the potential exposure in welding, one can examine the face of the welder's hood. If there is marked evidence of fume deposits on the hood, there is possibly a high exposure to iron oxide or welding fume in the breathing zone. The cause may be the worker's position with respect to the exhaust hood, or it may be a faulty exhaust system. Each exhaust hood has an effective area for the removal of the contaminant, and the source of the contaminant

Mr. Wagner is industrial hygienist at Deere & Co.

should be within the effective range of the exhaust hood.

CRITERIA FOR EVALUATING SURVEY RESULTS

Reports should contain all the data and observations. Thus, they should include:

1. The authority or reason, the location of the operation and materials
2. Comparison criteria
3. The method of analysis and the quantitative data
4. Recommendations (whether favorable or unfavorable from the viewpoint of industrial hygiene).

The reasons and the location of the operation and materials will be important both for future comparisons and for the current recommendations.

Comparison criteria will establish a basis for evaluation of the hazard. You in Iowa do not have a Health and Safety Act such as we have in Illinois. However, if you desire, you can purchase copies from the Industrial Commission of Illinois. I am confident that the Illinois regulations would be acceptable in most states, and that reasonably safe environmental conditions would be maintained under this Code. There are several other authoritative sources of criteria or recommendations.

The American Conference of Governmental Industrial Hygienists reviews a list of threshold limit values for hazardous substances annually, and issues a revised list. These threshold limit values are not *fixed* criteria. Some values reflect the maximum allowable concentrations to which eight-hour daily exposures are permissible, and other values are the current judgment of authorities based on animal studies or single human exposure experience. These latter values may have been set well below actual permissible concentrations because of the limited data available.

The ACGIH also publishes an INDUSTRIAL VENTILATION MANUAL which has almost become a national standard. This manual contains practical information on the design and testing of exhaust ventilation systems. The designs of many hoods, cabinets and housings are presented in detail.

The Industrial Hygiene Foundation, in Pittsburgh, issues the monthly INDUSTRIAL HYGIENE DIGEST, containing current articles regarding medical, engineering, chemical, toxicological and legal aspects of industrial health and hygiene. The Industrial Hygiene Foundation will also provide engineering and research facilities and staff assistance in the development of such programs for industry.

The American Industrial Hygiene Association issues HYGIENE GUIDES, a bi-monthly publication containing articles of general interest in the field of industrial health and hygiene. All of the common hazardous chemicals and other materials are covered.

The American Standards Association has a long

list of bulletins covering safety and industrial hygiene.

The American Foundry Society has published many manuals dealing with foundry practice, including health and safety precautions to be taken in the foundry.

These publications and services that I have mentioned are not all of the authoritative sources of information on the subject. In addition, there are texts covering industrial hygiene. But the journals and manuals that I have listed will give you a basic library upon which you can expand if you are initiating an industrial health program or wish to find criteria against which to compare your experience with a particular hazard.

TECHNIQUES FOR CONTROLLING DUST HAZARDS

Now, I should like to cover some of the individual control measures for various environmental hazards.

Exhaust or dilution ventilation is possibly the most used control measure for environmental contaminants in ferrous manufacturing. Control by exhaust ventilation at the source of contaminant is the most economical. Here, the air volume required for control is relatively small, and the contaminant can be collected before it has been dispersed in the atmosphere. The term *free air* does not apply after air has been heated or cooled for comfort reasons, and one doesn't want to exhaust any more air than necessary in controlling a particular hazard. Exhausted air should be replaced with heated or cooled air for good environmental control.

Silica sand used in foundries can be a hazard if the fines are permitted to contaminate the air. Every process which creates dust should be provided, where conditions permit, with local exhaust hoods to control this contaminant.

The minimum air flow required by most codes to control airborne dust, fumes or vapors is 100 feet per minute at the point of origin of the contaminant. The direction of air flow should always be over or through the operator's breathing zone, then over the source of contaminant and on to the exhaust hood and thence outside or to suitable collectors to preclude contamination of other areas. I am convinced by my own tests that the 100 FPM minimum requirement is satisfactory; however, higher velocities are not out of order in many cases.

Smoke bombs are useful in determining the direction of air flow. The sulphur type with open flame cannot be used where highly explosive vapors are present. In these restricted areas, a substitute smoke generator is titanium tetrachloride. This liquid is corrosive and the fumes slightly acid, and consequently some caution is required in its use. Small quantities placed in glass ampoules can be handled relatively safely, and shelf life is long.

Titanium tetrachloride smoke generators are especially useful in the inspection of equipment which requires only negative pressure to control fume escape at the cracks of the normally closed doors. The smoke will indicate the direction of air flow where air velocity measuring equipment will not function.

Visual inspection of foundry equipment around sand handling equipment such as mullers, drops, towers, conveyors, etc. will indicate whether there is a definite dust exposure. Look at the overhead pipes, duct work, machine frames, angles and other such surfaces around or over the operator's breathing zone to see whether fine dust has pyramided there within a short time. If so, inspection or installation of exhaust ventilation is in order.

Water is a known dust suppressor. Some codes require ventilation of sand-handling equipment if moisture is below a given per cent. Water can be applied automatically in most cases.

The castings, after pouring, are removed from the sand molds. They are removed either hot or cold. In automated foundries, the castings usually are removed after only a minimum of cooling. The hot sand and the casting create a radiant hazard as well as a danger from thermal air flow. The heated air also expands. These conditions in the removal of hot castings demand an exhaust system of higher capacity and higher velocity for dust control. The exhaust capacity should be at least 400-500 cubic feet per square foot of grate area for side hoods with hot castings, and 350-400 cubic feet per square foot for cool castings.

The point I wish to emphasize is that local conditions surrounding any operation may increase or decrease the control requirements. The criteria given here in this paper are those which are usually sufficient for the control of contaminants in the breathing zones of operators, and that, of course, is the prime concern in environmental control.

Threshold limit values for siliceous dust are related to the per cent of free silica content in the dust:

<i>Threshold Limit</i>	
Above 50 per cent free silica	5 million parts per cubic foot
5-50 per cent free silica	20 million parts per cubic foot
Below 5 per cent free silica	50 million parts per cubic foot

The wide increment of 5 to 50 per cent free silica is of concern to control engineers. Cummings, in 1935, proposed a rule of thumb which was adopted by the National Silicosis Conference in 1938 as a practical guide for good engineering practice. This guide states that if the product that one gets by multiplying the dust count and the percentage of silica content is over 5,000,000, the concentration is too high. The guide does not apply to dust containing less than 5 per cent of silica.

Dust-counting technics are not difficult and are the only means of obtaining quantitative analyses of dusty areas.

Cooled castings are then taken to the mill or cleaning rooms, where the core sand, sprue stubs and flashings are removed by various cleaning methods. Tumbling, shot blast, grinding and related methods all create some dust hazards because of the imbedded silica sand in the surfaces of the castings. This dust should be removed from the operator's breathing zone. Codes usually specify exhaust ventilation for these operations.

Ventilation equipment in general has usually been designed and installed properly, and works very well. As time passes, the numbers of machines required to maintain production usually increase. Some of the additional machines require exhaust ventilation. The addition of these to the previously existing exhaust system is permissible if—and this is important—the present system has sufficient capacity to maintain control at all the work stations. Supervisors need only to call the ventilation engineer to get an answer to this question.

Another piece of equipment that I believe is necessary in all central exhaust systems that control environmental conditions for a number of operators is an inclined manometer installed across the fan. This gauge or tool will indicate whether design conditions are being maintained. Connecting tubing can be extended from floor level to overhead fans. The cost is low—about \$15 to \$30, in contrast to the high cost of exhaust ventilation systems.

Filters or screens placed between the fan and the point of exhaust are some other places where inclined manometers can be used. In those locations, they indicate the need for cleaning screens or changing filters.

METHODS FOR DIMINISHING PAINT HAZARDS

Removal of paint fumes and overspray is another job for exhaust ventilation. Here, the hazards are in the pigments and the vehicles. Toxic substances are sometimes used in paint-pigment formulation, and it is thus necessary to control the overspray. The volatile vehicles are toxic in varying degrees, depending upon the type used.

Paint booths, hoods, cabinets, etc. are used in control. All require exhaust ventilation, and most use water or paper filters to separate the particulate matter from the volatile fume. Some small operations discharge the particulate and volatile directly to the outside. Spray painting of nontoxic materials usually requires ventilation because of the nuisance to good housekeeping practice.

When exhaust air is drawn from paint booths through filter papers, and the overspray is thus collected upon the paper, the pigment gradually fills the pores in the paper and renders the ventilation system ineffective. Thus, it is almost mandatory that an inclined manometer be placed across the filter to assure a minimum exhaust air flow for the operator's environmental control.

Visual inspection of spray booths or hoods will indicate whether the exhaust ventilation is sufficient, or whether the spray painters are spraying outside the confines of the booth. An efficient system will not allow the escape of paint particles outside the booth or hood area.

One word of caution a little outside the field of industrial hygiene. This concerns the action of lacquer and oil paint in the same booth. The oil paint oxidizes and can cause spontaneous combustion. This action is accelerated in the presence of the low-flash-point vehicles used in lacquers. Separate booths should be provided for the application of oil paints and lacquers, and dirty paper filters or paint deposits should be removed as a fire-prevention procedure.

Paint dip-and-dry areas should be ventilated to remove the flammable vehicle fumes. Large areas should be ventilated through the use of several small fans, rather than one large one. The smaller fans assure adequate distribution.

The toxicity of these volatile hydrocarbons requires that the maximum permissible concentrations be much lower than those which insurance companies require for the prevention of explosions and fires. Insurance companies specify maximums approximating 25 per cent of the lower explosive limit, though toxic concentrations reach the threshold limit when only 5 per cent or less of the lower explosive limit is present, depending upon the vehicle used.

In future painting operations, water-soluble paints may decrease the environmental and fire hazards, leaving only the nuisance potential.

PROBLEMS POSED BY NEW WELDING METHODS

In the past, welding operations using metallic arc have been done with little hazard to health. Eye protection, skin or clothing protection, and a minimum of ventilation constituted adequate safeguards. Today, we have arc welding with inert-gas shielding and high current flow. The potential hazards with this inert-gas-shielded welding are:

1. Ozone
2. Oxides of nitrogen
3. Carbon dioxide and carbon monoxide
4. Trichloroethylene decomposition
5. Radiant energy (ultra-violet)
6. Radioactivity from thoriated tungsten electrodes
7. Metal fumes.

These potential hazards have some direct relationship between current flow and concentration. High current flow usually increases the concentrations. More research is in progress on this type of welding, but to date these are the dangers:

1. Ozone and nitrogen dioxide are usually found within threshold limits.
2. Carbon dioxide shielding, a hazard in itself, may also create a carbon monoxide hazard unless ventilated.

3. Trichloroethylene degreasers or vapor should be remotely located. "Trichlor" vapor in the atmosphere around the arc will break down to phosgene.

4. Ultra-violet radiation is increased 5 to 30 times as high as in the older metallic arc type of welding. It is imperative that bare skin be protected from the direct rays. Only dull paint should be used on booths or other reflecting surfaces. Cotton clothing disintegrates because of the high ultra-violet radiation.

5. Radioactivity, one study has indicated, poses no hazard, except possibly when welding is being done in very confined spaces.

6. Metal fumes are possible with either metallic-arc or inert-gas arc welding. Exhaust ventilation is necessary for good environmental conditions.

Lead fumes from soldering, sweating, babbitting, heating or other operations where lead is in the molten state require ventilation. Dross should be placed in containers where the lead oxides will not become powdered by traffic and then become airborne to contaminate the atmosphere.

DANGEROUS SUBSTANCES SHOULD ALWAYS BE LABELLED

You are undoubtedly aware of the recent proposal by the AMA to require that all household and commercial chemicals be labelled. In Illinois, we have had a statute requiring the labelling of all hazardous materials used in industry, and it has been in effect since 1951. This labelling is worthwhile. Employees are able to handle unfamiliar materials with due caution by following the labelled instructions. Small quantities used in the shops must be obtained in approved labelled containers. Milk or pop bottles are not on the approved list.

The voluntary initiation of this labelling program by industry is a step in the right direction. Analysis of only the poisonous materials purchased and the methods in which they are used may show a need for labelling in your industry.

Labelling does take some effort, but there are some benefits to be derived from it. There may be suitable substitutes for particularly hazardous substances, or substitute processes, operations or functions can be found that do not require the use of the more hazardous materials.

One hazardous material which has become notorious across the country is carbon tetrachloride. The threshold limit for "carbon tet." is 25 parts per million. There are substitutes on the market which work equally well and have threshold limits of between 400 and 500 parts per million.

These, I consider the major potential hazards of ferrous manufacturing, and these are covered in most health statutes. There are other hazards, and undoubtedly new ones will become known in the future. But as in the past, industry will establish controls for these new hazards, and will continue to improve environmental conditions.

Safety Engineering Aspects of Farm Injuries

NORVAL J. WARDLE, Ph.D.

AMES

IN ALL OF MY LIFE, I have never met anyone who was *not* safety-minded. Oh I know, like you I have met many people who appeared to me, as I watched them, not to be safety-minded. But it has been my experience that if I asked these people just what they were doing and became acquainted with them, I found out that they fully intended to avoid getting hurt. They felt that they had it all worked out, for it had been their experience that by proceeding in a particular fashion they could be sure of avoiding injury. This is one of the basic facts that I think we need to build our safety programs upon—that basically, all people are interested in safety. Safety, after all, is just living, and all of us want to live. We want to live happily; we want to live without injury. And really, that's what safety is!

However, there are some cold facts that we need to recognize, and they are that there are hundreds of thousands of people killed in accidents every year, millions of them injured, and many sustaining incapacities that will hamper their activities throughout all of their remaining days. Among our Iowa farm people, we had this sort of picture eight or ten years ago. Each year, somewhere on the order of 520 of them died as the result of accidents. In corn harvest accidents alone, between 560 and 600 of them were injured severely enough to require their being treated by doctors. There were on the order of 300 tractor accidents on our public roads. An average of two lost-time accidents occurred in every farm family in the state, making a total of about 380,000 lost-time accidents among our farm people, and these accidents and fires were costing the people of our state—i.e., the farm population—about \$30,000,000 a year.

Let's look at that overall picture today. Just what was it in 1957? A total of 426 died as a result of accidents—a reduction of almost 100 from eight years earlier. There were 180 doctor-treated accidents during the corn harvest, as compared with 562 eight years before. There were 278 tractor accidents on our public roads, as compared to 296 eight years earlier. There was one lost-time accident per farm family instead of two, or a total of 180,000 lost-time accidents among our farm people in the state of Iowa as compared to 380,000 eight years before. The average number of accidents per family wasn't reduced so much as the reduction in totals might have led one to expect, for there were fewer farm families in the state in the latter of those years. The cost of the acci-

dents in 1937 was \$24,000,000, as compared to \$30,000,000 eight years earlier. This reduction would have been considerably greater if it hadn't been for the inflation of the dollar.

This improvement that has occurred has been almost entirely the result of the spontaneous interest of all farm people in learning how to live safely. They appear to have been just waiting to find out how to do it. Yet, we haven't really done very much about telling them how to do it. All we have done is to try to make them a little bit more conscious of the problem, and that is where we have been successful—in the development of that consciousness.

THE PROBLEM IS STILL SERIOUS

The problem is still a tremendous one in the State of Iowa. Let's look at some of the facets of the problem that still faces us today. Fatal accidents occur in highest proportions among the very young and the very old. Children four years of age and under sustained 55 accidents for each 100,000 such individuals. Persons 65 years of age and older had an accident rate of 338 per 100,000. Now let's look at the accident rates for some of the other age groups. For children 5-14 years old, it was 25.5 fatal accidents per 100,000 and for adults between 25 and 44 years of age, it was 30.5 per 100,000. Thus, the peak rates were at the two extremes of the age span.

We see quite a different picture when we look at the distribution of non-fatal accidents among the age groups. According to our records, the highest incidences of such mishaps are among people in the more active ages—just the reverse of the fatals. Here, the peaks are in the teenage and middle-age groupings.

Another interesting feature of these statistics is that fatal accidents have a certain order of occurrence as regards the kinds of accident. There are more fatal accidents in traffic than there are in homes or work or recreation. In fact, the sequence I just used is the order of their frequency: traffic, home, work, recreation. However, when we get the picture of all accidents that occur, both fatal and non-fatal, and consider their total cost, the order then becomes (1) work accidents, (2) home accidents, (3) recreation accidents and (4) traffic accidents. Now we shouldn't conclude that in the overall final picture our traffic accidents aren't especially important, but we should recognize the fact that the mishaps which occur elsewhere deserve a full share of our attention—i.e., accidents at work, in the home and during recrea-

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tion. This is particularly true with the farm population.

FARM PEOPLE HAVE SPECIAL HAZARDS

Now let us look at another aspect of this problem. In the various age groups, there are particular types of accidents that are critical. This has been shown to be true of other populations as well as of our rural one. But I'll give you what it is with our rural population here in the State of Iowa. For children four years of age and under, the big problems are smothering, the ingestion of poisons (and those poisons aren't such things as strychnine, etc., but rather are aspirin, petroleum products, particularly kerosene, and so forth), and drowning in stock tanks. Right here, it might be well for me to interject another parenthetical explanation, this one having to do with smothering. It has been found on many occasions, particularly by medical doctors, that children who appear to have smothered have had respiratory diseases or ailments. Yet, as I have investigated these cases, I have asked whether the respiratory condition of itself could have been responsible for the death, and the answer in most cases has been that almost certainly it couldn't have. Therefore, death occurred from a combination of smothering and a respiratory condition. The person needed an easy supply of air and didn't get it. In other words, very likely the individual would not have died from just the smothering condition, or from the respiratory condition without the smothering. Thus, a part of our safety problem is the taking of special precautions with children who have respiratory difficulties.

In children between five and 14 years of age, play accidents are critical. Now farm children don't always, or even usually, play in places or with equipment intended for that purpose, and thus they aren't usually hurt on swings, while skating, etc. Rather, quite often, the child falls off a tractor that is standing in the farmyard, falls from the door of the hay mow, or is struck by a piece of machinery while playing too close to a farming operation. In other words, the child sustains an injury while playing, though the play took place in a dangerous area.

For individuals in the 15-24 year age group, there are two areas that are critical: recreation and work. "Recreation" for 15-24-year-olds and "play" for 5-to-14-year-olds are parts of the same category. Recreation for these young people frequently consists of driving—just traveling around in the country as a means of passing the time, or going to a movie or a dance, perhaps a group of young folks together. The other area is work. Often they are just beginning to do some of the farm tasks and have accidents as a result of inexperience.

Now in the 25-64-year group, the accidents are primarily those connected with work. In persons over 65, we have poisons (particularly sleeping

-pills, but strychnine and other things get in here), as well as fires and falls.

PLANS OF ACTION

Now what can we do to prevent these mishaps? Well, in the 0-4-year group, adults must furnish protection. That is, they must supply play pens and play yards. These small children should not be allowed out in the farmyard. I repeat, the prevention of accidents among farm children less than five years of age consists of adults' guarding the children!

For children in the 5-14-year group, safe play areas and organized recreation must be provided. We need to teach the children how to play safely—to teach them not to play around or on farm machinery. We might even start tractor driver training for this group and offer instruction in the operation of other machinery that they can help with at this age. Primarily, the objective of this training should be the development of respect for machines and an awareness of the hazards that they pose. Machines, like pocket knives, are necessarily dangerous, and since there isn't very much that we can do to make them safe without at the same time rendering them useless, we must do everything we can to make youngsters highly efficient in using and controlling them, and to make youngsters conscious of the risks that are involved. Thus, the focus of the instruction must be upon the development of safety skills, rather than upon proficiencies that may lead to exhibitionism or daredeviltry.

Now regarding the 25-64-year age group. We just need to recognize that these people should slow down a little. They are past their peak physically, and they are slowing down, whether they realize it or not. It is among these people that *hurry* is a great problem as a cause of accidents. They need to learn and to practice safety skills all of the time, in all of the things that they do! This does not mean that they need to practice safety first, but that while such a man is operating a tractor plow in a field, he needs to do his job just as safely as he possibly can.

Now what about those over 65? We come again to a group for whom protection is the primary need. Here, of course, what is needed isn't protection against a lack of knowledge, but protection against the frailties of age. Rugs and other floor coverings need to be securely fastened. Satisfying activities need to be planned for these people so that they won't experience periods of depression during which they may be more than normally susceptible to accidents. Ideally, they should be enabled to live where there are no stairs, or at least where stairs are easy to walk on. We need to have good heating systems, for in this period of life people have a tendency to seek a great deal of heat. The stove or furnace must be one that is sure not to emit dangerous gases when it is pushed a little beyond the usual—gases that will

be dangerous when everything is closed up good and tight for a long period of time. Furthermore, we need to recognize that people in this age group need good health services so that they can be as responsive to their environment as possible and can live safely in it.

SOME CONCEPTS FOR US TO TEACH

There are some other problems that we need to recognize as we try to make our rural areas into safer places to live in. We need to recognize that even though the differences between the lives that rural and urban people lead are not so radical as they once were, there still are some dissimilarities. Rural people are more independent than are city people. They work and play in smaller groups, and those groups more often than not are loosely organized and unsupervised. These characteristics create a safety problem. How are we going to educate farm people so that they will live safely? In order to do this, I think we need to sell them on at least four basic ideas:

1. *Safety is fun.* It's living fully and without injury through many productive years. Since the chances are that heedlessness will lead to misfortune of one sort or another, and accidents produce pain and may either snuff out life entirely or produce crippling conditions, safety must be fun.

2. *Accidents are caused; they don't just happen.* As most people do, we pride ourselves on not being superstitious. Yet each of us is inclined to rely unreasonably on luck. For example, each of us

knows over-fusing and overloading an electrical circuit is likely to produce a fire, but we've done these things at times and never had a fire. If we know anything at all about electricity, we can have no doubt that the wires became hot and would have started a fire but for the circumstance that nothing inflammable was lying alongside them. We need to recognize that accidents occur when two, three, four or a half dozen factors occur in conjunction, and that in most instances one or more of those factors has lain within the control of the person to whom the accident happens. Thus, as we look for and correct dangerous conditions, and as we train people to follow safe practices—i.e., to avoid supplying what well may be the only missing ingredient in a potentially disastrous mixture—we reduce the possibility of accidents, or in other words, increase our Safety Quotient (S.Q.).

3. *All accidents can be prevented.* Just as we recognize today that all diseases can be controlled, even though there are some that so far haven't been, we need to recognize that all accidents can be prevented, even though we haven't yet learned how to do all of that job.

4. *It takes knowledge and many skills to live safely in modern, rural Iowa.* If we want to live safely, we must work at doing each farm and each home job as safely as possible, and also we must be careful in our recreation. When we get this idea and put it into practice, we can erase accidents from our experience!

Occupational Health Nursing In Small Industry

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IN 1941, THE United States Department of Commerce suggested that a small manufacturer might be defined as one with 100 or fewer employees. More recently, there has been a tendency to say that any manufacturer having 500 or fewer employees is small, but almost everyone admits that it is wrong to set any single overall standard. *Small* is a relative term, and what is large in one industry may be comparatively small in another.

A health program in a plant with fewer than 500 workers is economically practical. It can decrease the compensation insurance premium, the number of absences, the number of accidents and the labor turnover. It can increase the quantity and the quality of production. But besides financial

savings, the program will improve the health of the workers, and increase the regard in which the company is held by the men, their families and the community.

Each in-plant health program must be designed to fit the factory in which it is to function, for plants vary widely in the amounts and types of medical service they require. In addition, the medical service they require. In addition, the medical service must be coordinated with the routines of the operating departments so as to minimize unwarranted expense. By this means, time schedules in the medical department can be adjusted to the convenience of employees, thus reducing the time they will need to lose from their work.

Occupational health nursing has been defined as the application of nursing and public health procedures for the purpose of conserving, promoting

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and restoring the health of individuals and groups through their places of employment. Such work is carried out most successfully when there is a nurse on full-time duty in the plant, and as a matter of fact, the smaller the number of employees, the more numerous are the opportunities that the nurse has for working effectively. There is general agreement that the nurse in a small plant is not kept adequately busy when her responsibilities are limited to problems relating to accidents, and thus she should be judged on the basis of the ways in which she employs the remainder of her time. As I shall point out later, she can make significant contributions to the employees' satisfaction in their jobs and in the remainders of their lives.

JOINT RESPONSIBILITIES OF PHYSICIAN AND NURSE

An effective occupational health program may require the services and skills of many professional people, including a physician, a nurse, an industrial hygienist, a sanitary engineer, a safety engineer and other specially trained persons. The nurse has a key position, however, for she is the one responsible for the practical application of principles and for the achievement of goals in industrial medicine, and in a great many cases, she is the only representative of the health professions who is present within the plant all day and every day.

The physician is essential to the proper conduct of an industrial health program, for to him belongs the responsibility for its overall direction. Both legal and ethical considerations require this arrangement. When the services of a full-time medical director are not feasible, management should adopt a "physician-in-charge" arrangement on a part-time, on-call, *per diem* or consultative basis. The doctor's supervision should be active, personal and definite, even if it consists only of periodic consultation with the nurse relative to routine nursing matters, and on-call availability for situations requiring medical service. The physician should provide the nurse a set of standard procedures for her guidance during his absence—a set of rules that have been discussed and agreed upon in consultation with her. These should be in writing and should bear the doctor's signature.

One of the main problems in occupational health services, however, occurs when the on-call physician is rightfully unwilling to assume medical responsibility for the overall plant health service, or when there is no medical direction at all. Standing orders are by no means an acceptable substitute for medical direction, nor are they an adequate protection for patients. They are a set of general rules, rather than a specific order regarding a specific patient with a specific diagnosis. They are of no value unless signed by a physician, and they cannot include directions for the care of all possible injuries and illnesses.

The physician is required to exercise professional judgment and discretion in making a diagnosis and prescribing treatment. The nurse, in carrying

out the physician's orders, is required to exercise professional ability and skill. She must bear in mind at all times that she, herself, is accountable for performing her duties in a competent manner, and that she may be held personally responsible for wrongful acts or negligence, even if she acts under the authority of a physician.

According to a statement prepared by the Subcommittee on Revision of Standing Orders for Nurses in Industry of the AMA Council on Industrial Health, the occupational health nurse should not rely on "standing orders," standard procedures, or medical directives from an on-call physician who has not been designated by management as the physician-in-charge of the in-plant medical service. Rather, she should report to the full-time physician or medical director, if there is one, or when a part-time or other physician-in-charge arrangement has been established, she should report to that doctor in all professional matters, and to a member of management on administrative matters.

The physician ordinarily will represent the health service in conferences with management, but in the case of part-time medical services, provision should be made for the nurse to discuss certain nursing problems with management so that they may be resolved promptly and efficiently. Management should be conversant with the scope and limitations of the practice of nursing, and should neither expect nor request the nurse to exceed her normal scope of service. Company policies regarding the medical service should be formulated in the light of the Medical Practice Act, the Nurse Practice Act and other pertinent regulations.

The nurse can get consultation service and guidance from occupational health consultants in state and local health departments. She can also ask her firm's insurance company whether it provides such assistance. These consultants can be of great assistance, particularly to a nurse who is working by herself.

THE NURSE CAN HELP WITH PREVENTIVE MEDICINE

The first and most important thing that a nurse in industry needs to learn is what might be termed the "table of organization"—the so-called "line of authority and channel of communications" within the framework of the industrial organization. When she has learned this, she knows exactly what her authority is, to whom she reports, and to a large extent what her relationships are with the other members within the organization.

At least 75 per cent of the companies with some sort of health program employ a physician on only a part-time or on-call basis, but even where there is a full-time physician, the functions of the nurse in industry are many. Let's take a look at some of them. They will depend on the situation and the needs of the particular employment, but basically they are as follows.

Her most important function is the administration of the Health Service Department. She participates with management and the physician in the formulation and implementation of policies for her department. She makes recommendations regarding nursing activities, including plans for adequate nursing service for employees on all shifts. She makes arrangements for other nurses to relieve her during her own absences. She attends meetings of the safety and personnel departments in order to integrate nursing activities into the programs with which the three departments are concerned.

The part the nurse plays in the safety program varies from plant to plant. She can make a large contribution to accident prevention among the workers both at their place of employment and in their homes, whether she assumes responsibility for this activity and works alone, or whether she assists the safety director and cooperates closely with his program.

The protection of workers against accidents calls for teamwork. Where a safety department is already functioning, the director of that department is the logical person to introduce the nurse to plant processes, to point out hazards and interpret precautions that are being taken to overcome them. He is the person to explain the type of safety education that is being carried on. There may be special responsibilities that he will wish to turn over to the nurse. For example, he may want her to sterilize and distribute goggles and respirators, and other necessary protective equipment. This is not a nursing procedure, but the nurse frequently assumes responsibility for it because no one else does. The safety director will explain accident reports, tell why specific forms are used, and point out the specific purpose that each of them serves. He will show her the statistics that have been compiled from reports that have been of value to the company in eliminating accidents.

The nurse should be permitted to sit in on safety meetings, many times acting as secretary of the committee. She can give better cooperation to the program if she knows the particular problems. Frequently, she is able to throw light on underlying causes of accidents that routine investigation may not have uncovered.

Physical examinations, when done on the plant premises, seem to be doubly effective. The employee connects the procedure with his work environment and gains from it an increased feeling of security. No physical examination has produced much benefit without a follow-up for the correction of defects, and the nurse's influence in getting the worker to seek remedial attention is a tremendous factor in the achievement of satisfactory results.

It is the nurse's responsibility to make sure that the physically handicapped are kept within the work limitations that have been specified for them by the doctor. Although a handicapped employee

may seem to have been placed satisfactorily, the nurse must be constantly on the watch for changes that may occur in his handicap.

The nurse is in a focal position, for the health unit is the place that the worker seeks when he has a pain—physical or mental. That is the purpose of the health unit, and in most plants it is the nurse who sees all who come there for help. When an employer provides professional health service at his plant, he is going beyond the minimum requirements of labor legislation in most states. He may be motivated by a genuine concern about the well-being of his employees. He may be convinced that the economic success of his enterprise requires that every worker obtain from his job the personal satisfaction that makes him willing to cooperate. The nurse's acuteness of observation, her sensitivity to attitudes, her alertness to anxieties that cannot be verbalized, her recognition of the role of the individual in problem situations and her capacity for communication have far reaching effects in every worker's use of the health unit and on his attitude toward his work. The medical department of an industrial organization can do more to improve human relations and working conditions than can any other segment of the firm. Industrial health programs as they are carried out in modern plants with their broad concepts and their public health-like teaching programs are frequently largely dependent upon the nurse. This is especially true in many plants where there is no full-time physician but where there is a full-time nurse. The breadth and effectiveness of this program rest largely on the occupational health nurse's concept of her job.

The experienced occupational health nurse sees the employee as an individual. To appreciate fully the importance of occupational health nursing, one need only ponder for a moment to realize that the nurse can "make" or "break" the health program. All of us have seen successful programs that were almost exclusively the result of a nurse's vision and initiative. Likewise, I am sure, all of us have seen some wrecked because of the apathy or unpreparedness of a nurse. It is a fact that the occupational health nurse has great need to exercise her own judgment, and an opportunity to put her own ideas into practice. The nurse's daily contact with employees in the medical department can and does prove invaluable. Frequent plant tours by the nurse are most important. The employee's physical surroundings on the job may contribute to his becoming a problem. Cold, ill-lighted, badly ventilated or dirty factories, or a lack of attention to occupational hazards, may subject him to more than ordinary stresses and impair his morale. Good morale in the plant is just as important as good physical health.

An occupational health nurse is expected to be not only a nurse but a diplomat of the first order, a humanitarian, a manager, a bookkeeper, a teacher, an editor, a statistician, a psychologist, an organ-

izer and a good housekeeper. In addition, she serves as an important listening post—a barometer, if you wish—of employee opinion and welfare.

Besides rendering important services herself, the nurse should know where to go for outside help when she needs it. She should be genuinely interested in the workers' personal and home problems, and should use the community agencies in helping find solutions for them.

The nurse's responsibility in maintaining the health of the worker may be compared to the engineer's concern for good machine maintenance. Finding out what is wrong with the employee and doing something about it before the difficulty becomes serious will also prevent breakdowns and prolong productive life. An employee's anxiety may cut deeply into his efficiency and productivity. A worried wage earner will not produce well and is subject to accidents on the job.

To the employee, poor health means loss of wages, a reduced period of useful and productive capacity, and the need for making arrangements to provide for himself and his dependents when income fails. Ill, injured or improperly placed employees mean loss of service, decreased efficiency, low morale and increased manufacturing costs for the employer. To the community, all these factors mean decreased prosperity and increased welfare costs.

The occupational health nurse has a unique opportunity to convey to the worker the interest and concern of management for his welfare. She also has an equal opportunity to assist management in understanding the needs of the employees. Elton Mayo actually demonstrated that interested workers are better workers—that the profit dollar, to a considerable extent depends directly upon the quality of human relations that are practiced in a plant.

The occupational health nurse retains the greatest possible contact with the workers of a plant because she is one of them. It is through her sympathy and through her understanding of all phases of occupational health problems that she can convey a proper understanding to those who are empowered to deal with the worker. The field of occupational health nursing is almost limitless. It reaches into every facet of the employee's life—his life on the job and off, and both its physical and emotional aspects. I think it important for us to remember that the worker is really two people. He has occupational concerns, and he has all the day-to-day cares that go with living. The man at the machine wants and needs assurance that he is something more than a cog in a production system.

In many instances, the nurse is the individual most readily available to the worker for conferences on matters relating to the employee's physical and mental well-being, and upon her understanding and rapport must rest, in large degree,

the benefits which an occupational health program can furnish.

No one else in industry has a greater opportunity to operate at the "grass roots" level than the occupational health nurse. Through her understanding and perception, she can foster a confidence, in her fellow employees, that management is genuinely interested in their well being. Yet, there are times when she must make a special effort if she is to succeed in doing so. What, for example, can she do to dispel the resentment of the man who came on time for a 10:00 a.m. appointment and has been kept waiting for nearly an hour? The delay hasn't been the nurse's fault. She has had to care for three emergencies, her morning's work seems certain to spill over into her lunch hour, and she isn't in an especially good humor, herself. Yet she should take an extra moment to explain to the man what has happened and to apologize for inconveniencing him. In just such ways, nurses become the architects of good human relations. I am not talking about a "do-gooder" attitude. I am talking about an attitude of genuine interest in one's fellow human beings!

Workers talk quite freely with the nurse in the course of her duties, and this talking frequently is a very good thing in itself. Like the rest of us, such workers frequently find that their troubles have grown easier to bear or even have ceased to exist when they have had an opportunity to describe them to an interested listener. A good occupational health nurse has many of the qualities of a counsellor. Every daily contact with an employee gives her an opportunity for wholesome guidance and counsel.

A nurse in a small plant does more than administer first aid. She constantly is reminding employees to have injuries taken care of promptly, to go to their family doctors and dentists, to have their glasses checked, to watch their weight, or to work within the limits that their blood pressure will allow. The nurse's office is a place to which all of them can bring their personal difficulties with absolute security. The nurse must of course be very careful to refrain from making suggestions or offering advice that only a doctor of medicine or a specialist in psychiatry is qualified to give, but merely by listening she can act as a catalyst as workers seek solutions for themselves. Thus, much of her work must go unrecorded and is intangible, but in the improvement of human relations it has its own undisputed place.

THE NURSE CAN AID PLANT MANAGERS

The unit of management with which the nurse has her most frequent dealings is Personnel, or as it is sometimes called, Industrial Relations or Employment. If her work is to be effective, her associations with the staff of this department must be characterized by mutual respect and confidence. Too frequently, however, the nurse is asked by

Personnel to divulge information which should remain confidential. The remedy for such situations must rest with the nurse, if she works where direct medical supervision is not available. It will be necessary for her to explain the ethics of the matter, and then to stand her ground. This is particularly true regarding medical records and the results of physical examinations. Such information should be released to management only in the form of evaluations or recommendations.

Appropriate physical surroundings in the medical department, an efficient routine and capable nursing personnel promote confidence on the part of employees and applicants for jobs. In fact, the applicant for a job forms much of his first impression of the company during his pre-employment examination, and the sick or injured employee is particularly impressionable during his visits to the medical unit. The attitude of both toward the company can thus be influenced tremendously by the way in which the health service staff receives them. For this reason, hardly any other component of the company has a comparable opportunity to influence the attitude of the worker.

Because of the very nature of its work, the health service has contact with every other department, and it is difficult to say which relationships are most important or which involve the greatest number of problems. The health service has mutual concerns with Safety, Purchasing, Insurance and Welfare, and of course with the cafeteria and with employee organizations.

Management, the physician and the nurse should be familiar with the laws regulating the practice of medicine and nursing in their state, and also with professional liability and malpractice insurance coverages and limitations.

PROFESSIONAL ORGANIZATIONS OF NURSES

The occupational health nurse must acquire much additional knowledge and many extraordinary skills so that she can provide data that will be helpful in building the future of her branch of the profession. In addition, she must work with other industrial nurses and the members of other nursing groups, so that nurses in the future can be trained as completely as possible to perform all of the functions that our fast-changing society is necessitating.

As all of you know, the activities, goals and functions of the American Nurses' Association are dependent on its 200,000 members. They determine the policies that guide the work of the organization. As a profession, organized nursing must provide the quality of care that the public requires. Occupational health nurses throughout the country have defined the functions, standards, and qualifications for nurses in industry that I have been discussing. The American Nurses' Association, from its earliest days, has worked for safe nursing care by promoting the sound state legislation under

which nurses are licensed. Today, every state has a law licensing professional nurses. By participating in the activities of their professional organization, nurses have opportunities to acquire up-to-date information regarding nursing and health practices, and have opportunities to discuss their problems with one another.

Since industry has a great deal to gain from sound health service programs, it is logical to assume that it has some responsibility for securing such benefits. Therefore, it would seem essential that employers

1. Inquire whether a nurse whom they propose to employ is licensed to practice as a registered professional nurse

2. Ask whether she maintains an active membership in her professional nursing organization and participates in its major programs

3. Make it possible for nurses whom they employ to attend professional meetings, workshops and conferences designed to provide information that will improve their skills and effectiveness

4. Participate with schools of nursing education and with health agencies in providing opportunities for students, faculty and staff of nursing schools to gain industrial health experience.

Management can then be assured of a sound, progressive and up-to-date health program conducted by a truly professional nurse who has acquired a full understanding of her own professional objectives and has developed an ability to interpret them.

By accepting responsibilities in her professional organization, the nurse in industry develops qualities of leadership that give her a degree of recognition which is a credit to her employer. Furthermore, as a leader, she becomes a valuable asset to her community as a participant in planning for the safety and health of the people at large.

CONCLUSION

Authorities in the field of industrial medicine often have called the nurse in industry the most important person in the in-plant health program. From the outline I have given you of her functions, you can see how right they are. From his experience with small-plant programs in Philadelphia, Dr. Glenn Everts has said that such a unit will fall by the wayside without the sustained interest of the physician and his adherence to the hours scheduled for his visits to the plant. But he goes on to point out that the plant nurse is the key to the permanent success of the service, even more than the physician, especially if the physician is in private practice.

The responsibility of the occupational health team goes far beyond the medical department. As a conservator of manpower resources, the industrial nurse has a teaching obligation that she must carry out with every employee with whom she comes in contact, so that the individual will go

back into the plant, back to his home and family, and back into his community carrying with him the principles of good health.

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State University of Iowa College of Medicine Clinical Pathologic Conference

SUMMARY OF CLINICAL FINDINGS

A 38-YEAR-OLD white man was first seen at University Hospitals in May, 1951, because of back pain. A series of examinations then and during the next 13 months established a degenerated intervertebral disc in the L-4 and L-5 area. The pain was relieved by conservative management, and he was discharged from the clinic in June, 1952, symptom-free and limited in his activities only as regards heavy lifting or similar activity that might provoke severe back strain.

The patient was then in good health until September, 1955, when he was struck in the mouth while playing football. Subsequently, an abscess formed about a tooth that had been partially dislodged. There was a purulent discharge from this abscess off and on during the ensuing four months. Beginning about January 1, 1956, he noticed anorexia, loss of pep and brief periods of dizziness. On January 13, for the first time in his life, he had a generalized convulsive seizure. During the next 24 hours, he had two additional convulsive seizures. The patient had little subsequent recollection of anything that occurred during a 24-hour period at that time. He was admitted to University Hospitals on January 30.

A physical examination revealed anisocoria, with the right pupil not reacting to light; absence of tendon reflexes in the lower extremities; diminished pain and touch sensations in an area along the medial aspect of the right leg; and an abscess related to the left upper lateral incisor. The patient's temperature was normal, and remained so throughout his hospital stay.

Routine urinalysis was negative. The hemoglobin was 15 Gm./100 cc., the white blood cell count was 13,450/cu. mm., and the differential was normal. A sedimentation rate was 11 mm. per hour, a blood serology was negative, a photoroentgenogram of the chest was normal, and skull x-rays were normal. An x-ray of the lumbar spine showed no interval change, as compared with the studies that had been made in June, 1952. A lum-

bar puncture revealed an initial pressure of 130 mm. of clear and colorless fluid containing no cells, and a quantitative protein of 57 mg. An electroencephalogram on February 2, 1956, showed recurring, right frontal, slow activity, a focal abnormality which was consistent throughout the record.

The left upper incisor was extracted on February 8, and the adjacent granuloma was curetted. The patient was discharged on no medication February 10, 1956.

The patient was seen again on March 27, 1956, in the out-clinic. At that time, the tendon reflexes in the lower extremities were reported as active and equal, and the pupillary light reflexes as normal. The patient had not suffered any additional seizures. He was given no medication, but was asked to return in three months.

When he returned in June, 1956, he reported that he had suffered another generalized convulsion on May 2. He had had amnesia for four or five hours after this attack. His family physician started Dilantin, 100 mg. daily, after this seizure. The neurological examination once more showed a right pupil that did not respond to light, along with absence of tendon reflexes in the lower extremities. The patient was advised to continue Dilantin in the same dosage and to return for a follow-up examination in six months.

When he returned to the out-clinic on December 27, 1956, he reported that he had had one mild seizure during the intervening six months. Following it, his family physician had increased the dosage of Dilantin to 100 mg. twice daily. It was interesting that the patient reported having had nausea and a very severe headache about two days prior to that attack. Afterward, he had a disturbance of memory and awareness which continued until about three days following the seizure. Once more, the only abnormality on physical examination was an absence of light reflex in the right pupil, and diminished tendon reflexes in the lower extremities, though there was a detectable knee jerk on the left. He was advised to continue with

the Dilantin in the same dosage and to return in six months.

The examination in June, 1957, was reported as showing no alteration in the physical findings. The right pupil was 3 mm. and the left 2 mm. in diameter, and the light reflex was absent on the right. The patellar reflexes were present bilaterally, but the ankle reflexes were absent. A complete blood count was entirely within normal limits, and the urinalysis was again normal. The patient reported he had been seizure-free throughout the intervening six months, but he described several episodes of disturbed memory and altered behavior lasting as long as a week at a time. His wife stated that during these periods he was unusually irritable, seemed to forget things that he would ordinarily have remembered, and even failed to recognize old friends. The patient reported that he no longer had headaches. He was advised to continue Dilantin in the same dosage and to return one year later.

In February, 1958, the patient began to have "black-out" spells and requested an earlier appointment in the neurology out-clinic. He arrived in Iowa City February 19, planning to stay the night in a hotel. Some time during the early morning hours, he had a seizure and was found unconscious, with froth about his mouth, and retching. He was brought to the hospital in an ambulance. When he was examined in the emergency room, he was cyanotic and was making ineffective respiratory gasps. The peripheral pulses were not palpable, but there was a carotid pulse at a rate of 120 per minute. There was mucus in the pharynx which could not be removed by suction. An emergency tracheotomy was done. Copious frothy sputum bubbled from the nose, mouth and tracheotomy site. By the time the tracheotomy was completed, the patient had expired.

SUMMARY OF CLINICAL DISCUSSION

Dr. Olan R. Hyndman, chief of neurosurgery, Iowa City VA Hospital: Taking this protocol as given, and with the premise that no positive physical findings have been omitted, I must judge that at no time was there unequivocal evidence of increased intracranial pressure. I would attribute considerable importance to the absence of such evidence, for I feel compelled to postulate a mass lesion. I would postulate a mass lesion on the strength, among other things, of the pupillary signs, the EEG findings and the convulsions.

A word about the pupillary signs: In the absence of involvement of the retina or optic nerve (i.e., the afferent limb of the pupillary constrictor reflex arc), I would attribute the dilatation and light fixation to some compromise of the efferent limb (i.e., the parasympathetic component of the third cranial nerve). It is known that the oculomotor, or third cranial nerve, can be severely impaired as a consequence of pressure associated with a mass lesion in a fronto-temporal

location. A rather complete and permanent impairment of the function of this nerve has been correlated with herniation of the uncus over the incisura, the herniation being a consequence of an expanding lesion. It is also known that unilateral dilatation of a pupil, as a single and reversible eye-sign, is not uncommonly associated with a relatively acute mass lesion (hematoma, in particular) on the same side. I judge that such a singular and reversible dilatation is due to mild, or partial, compromise of the third cranial nerve. Thus, it is conceivable to me that a mild compromise of this nerve might result in pupillary dilatation and loss of light reflex without other signs of third-nerve paralysis. Moreover, it is conceivable that such partial signs might be reversible, and might appear and disappear with fluctuation in a mild form of increased intracranial pressure. I can think of no other relations that would explain the fluctuating pupillary signs described here.

Now, when I postulate a mass lesion, I must do so in the absence of signs of inflammation (excepting the abscessed tooth) and in the absence of any recognized increase in intracranial pressure, at least in any degree significant enough to make it recognizable. The three common types of mass lesions are tumor, abscess and hematoma.

A benign form of tumor in right frontal location, such as meningioma or astrocytoma (non-deforming), could conceivably account for the events documented here, and the trauma at football and its consequences could have been only coincidental. Appropriate fluctuations in local pressure could result from the hard generalized convulsions, with long intervals between, and conceivably could explain the eye signs. Moreover, it is not too uncommon for benign forms of frontal tumor to be unassociated with the signs of either acute or chronic increased intracranial pressure, or even some other abnormal and suggestive signs, for long periods in their history.

However, there are two considerations that favor hematoma and abscess over tumor. First, the relevant complaints began 4 or 4½ months after the trauma and the formation of an abscess around the tooth. This time relation cannot be logically ignored. Second, despite what I have just said about how tumors can behave, one would, in deference to the more common behavior of tumors, expect symptoms and signs to be more progressive and less fluctuating over a 2½-year period than they were here.

What can one say about a chronic frontal abscess versus a chronic subdural hematoma or hemato-hydroma? These two forms of pathosis can sometimes be very difficult to differentiate, and even in respect to the case history at hand, one might be justified in defending either one. I would like to call attention to two things, however. Recall, please, that about half-way through his illness the patient experienced severe headache two

days before a seizure, and disturbance of memory and awareness for three days afterward. Other seizures were associated with unusual periods of amnesia, and he had a serious disturbance of memory with irritability for periods of a week. These two classes of symptoms (prolonged, periodic disturbances in the psyche, and headache in particular) would favor chronic hematoma. There is yet a third fact that I think is of importance, namely that his first complaints (for example dizziness) began four months after the blow at football. This time relation is not uncommon in respect to hematoma. If abscess were the lesion, one would expect it to have been initiated in the early phases of the formation of an abscess about the tooth, and not so long after the abscess had become a chronic draining focus of infection. And, of course, one would expect symptoms to be associated with the initiation of such an abscess.

In addition, it is reasonable to suppose that an abscess would have to enlarge periodically, causing increased intracranial pressure and thus producing the episodic symptoms that appeared during the course of the patient's illness. Periodic inflammatory activity of an intracerebral abscess does not correlate well with the fact that there was no evidence of increased pressure at the follow-up examinations, or any evidence that pressure had occurred and then subsided. For example, the optic discs were always normal. On the other hand, this is an old story with chronic hematoma, which—strangely enough—can cause severe headache and the psychological symptoms in the absence of, or with only minimal increase in, intracranial pressure. Moreover, when a patient does develop symptoms associated with slow, insidious hydration of a chronic subdural hematoma, leading to lethargy and perhaps confinement in bed, if he is not in a hospital, his fluid intake is deficient, and as a consequence of dehydration he may stage a spontaneous recovery. I have known such a spontaneous recovery to occur even from a state of coma. Such recoveries can occur several times, but not indefinitely, for things do tend to grow worse.

The length of this patient's illness, $2\frac{1}{2}$ years, is one of the factors that is not very favorable to the diagnosis of hematoma. Another is the EEG finding. It is my impression that although the amplitude of waves may be decreased over a chronic hematoma, the rate or frequency is not likely to be changed. "Slow waves," I understand, are generally more characteristic of an intracerebral or destructive lesion.

However, I am constrained to consider the lengthy illness and the EEG as "exceptional," and place emphasis upon the other features of the history which, for the reasons given, are rather typical of chronic hematoma.

I would, therefore, present my list of possible diagnoses in the following order of probability:

1. Chronic subdural hemato-hydroma located at least over the right fronto-temporal region
2. Chronic brain abscess, right frontal
3. Some relatively benign form of brain tumor, non-expanding, right frontal.

Dr. Carl L. Gillies, Radiology: The routine x-rays were negative. There were no encephalograms or special studies.

Dr. George R. Zimmerman, Pathology: This man had an astrocytoma of the right frontal lobe. It was about 3×4 cm. in span and appeared to have replaced most of the superficial cortex in that area. There was a little edema of the brain around the tumor. Microscopically, the cortical tissue, neurons and stroma were still evident; the stroma was infiltrated by neoplastic glial cells with variably-sized, abnormally-shaped nuclei that were generally larger than normal and occasionally quite large. There were only rare mitoses. These features place the tumor in Grade II, if one uses the classification in which the best-differentiated gliomas are Grade I and the most anaplastic tumors are Grade IV.

All parts of the lungs were extremely edematous and congested, and in places they were hemorrhagic. The entire respiratory tract, from the nose and mouth to the bronchi, was filled with frothy edema fluid. The abdominal viscera were severely congested. These are signs of asphyxia. How or why this man became asphyxiated is a matter for conjecture. Epileptics who die more or less directly from epilepsy, if for the moment we exclude status epilepticus, are thought usually to die from laryngospasm, from spasm of the diaphragm and respiratory muscles of the trunk, or from respiratory-tract obstruction by the tongue or by vomitus. In this case, there was no demonstrable aspiration of gastric contents, and death from status epilepticus is not a consideration.

One can further narrow the possible mechanisms of death by excluding asphyxia due to sudden, complete and persistent respiratory obstruction. Under these circumstances, pulmonary edema of this degree does not develop, perhaps because of insufficient time, and abnormal anatomic findings are meager—petechiae beneath the serosal coverings and less commonly in other tissues, visceral congestion, and hypocoagulability of the blood, all of which are inconstant. The brain tumor, because of its location and because it had no hemorrhages or other indications of rapid increase in size, cannot be seriously considered as an immediate cause of death. It appears, instead, to have been the first event in a sequence and was followed by the development of epilepsy. Then there was a partial or intermittent interference with respiration (type undetermined) during an epileptic seizure, and finally there was fatal pulmonary edema.

Dr. Robert A. Utterback, Neurology: A case like this brings up several questions. I'm sure that one of the first that will come to mind is this: In what

way does a convulsive seizure lead to death? Dr. Zimmerman has pointed out some very striking changes that occurred in the patient's lungs, and perhaps they were the primary cause of death. Certainly it would be difficult to explain this man's death on the basis of any anatomical changes in the brain. Disease in the brain was probably the fundamental illness, but not the primary cause of death. I wish you would say a little more, Dr. Zimmerman, about the production of massive edema in the lung as a part of the convulsive seizure. Must this come about because obstructive masses are aspirated into the bronchial tree, or is laryngospasm a real consideration? Can you suggest any other reason why 999 out of 1,000 patients go through a convulsive seizure with no obvious after effects, but an occasional one develops severe pulmonary edema and dies from what appears to be suffocation?

Dr. Zimmerman: Very little is known about the production of pulmonary edema and the mechanisms involved, particularly in instances such as this in which there is a fairly rapid development of edema. Recently, there has been some work in Dr. Katz's laboratory, in Chicago, which may offer a partial explanation, however.* The workers there produced pulmonary infarcts in dogs by injecting appropriate amounts of starch or NaOH solution into a lobar artery. Most of the dogs also developed severe, generalized and bilateral pulmonary edema, with an accompanying increase in the pulmonary venous pressure. Hypoxia, induced by a lowering of the oxygen content of the inspired air was found also to elevate the pulmonary venous pressure, though these experiments were not carried to the point of developing pulmonary edema, if such is possible.

What application has this to the human being? No one has answered this question definitely, but speculation on comparative anatomy and on a few physiological measurements is tempting and is limited only very broadly by fact.

Dr. Utterback: As a matter of fact, it is rather surprising how seldom we see a patient die in status epilepticus, when we consider how seriously ill such individuals may appear. It is dramatic to observe how well they may appear a day or two afterward. Perhaps some of the deaths that we hear about in patients who are said to have died during seizures were instances where status epilepticus was not identified. In the ones we have seen here, though, this has not been a real problem.

Another thing that might be worth a little discussion is the diagnosis of brain tumors. I am sure you are all very much aware that the diagnosis can be difficult whenever a patient has severe headache or has other symptoms clearly referable

to the nervous system. It seems that the first thought that pops into everyone's head is "brain tumor," and we spend a good part of our time trying to rule out brain tumors. Here, for some reason, it appears that no one seriously considered brain tumor. As I went through the record, I found that virtually every member of the Department of Neurology had seen this patient at one time or another, and no one had seriously considered this possibility. At the time of the initial examinations in 1955, there was a suspicion that the patient had a cerebral abscess. When the dental abscess was cleared, the patient began to feel entirely well, he had no more spells, and the examination of his spinal fluid was normal. Thus, apparently, everyone relaxed and thought the major problem had been solved.

If additional studies had been done at that time, I wonder whether we should have been able to identify the neoplasm. Because of its nature, as Dr. Zimmerman has outlined it for us, there could have been some doubt. A great many considerations come up when one considers doing these more traumatic procedures—angiograms, ventriculograms, pneumoencephalograms—and I think it might be well for us to have Dr. Hyndman review some of these considerations for us. Obviously, we can't do any or all these things on every patient who is suspected of having a brain tumor. How, then, are we to make our choice? How shall we decide which patient should have these further tests? How do we explain our failure to demonstrate the tumor in some instances when we have done them?

Dr. Hyndman: I think it was Herbert Spencer who said, "There is nothing so tragic as a fact that spoils a good theory."

Intracranial tumors can cause generalized epileptic seizures and yet, at least during part of their history, be unassociated with increased intracranial pressure and in addition fail to manifest their presence in a satisfactory pneumoencephalogram or ventriculogram. I have encountered three classes of tumor with these distressing characteristics. They can be the source of much embarrassment to the diagnostician, for often the correct diagnosis is made late, if at all. This is quite understandable. Generalized seizures are not focalizing, and even when they appear in middle age, they are by no means always associated with tumor. In the absence of significant neurological deficits and increased intracranial pressure, and certainly when the pneumoventriculogram appears normal, one is inclined to feel gratified and is happy to report to the patient and family that there is no tumor.

One class of such tumors is the small ones. Such a lesion is usually located in or on the cortex, and in or near the parietal zone. It can be a small meningioma. I recall a small (pecan-sized) hemangioblastoma associated with convulsions, and yet

* Rivera-Estrada, C., Saltzman, P.W., Singer, D., and Katz, L.N.: Action of hypoxia on pulmonary vasculature. *CIRCULATION RESEARCH*, 6:10-14, (Jan.) 1958.

a quite satisfactory ventriculogram appeared normal in all respects. The development of cortical sensory deficits in one of the patient's hands led to exploratory craniotomy and the solution of the problem.

The second class is that of the glioblastoma that arises in the temporal lobe close to the cortex. I recall three patients in whom generalized seizures were the presenting symptom. The first ventriculogram in each case appeared normal. A repeat ventriculogram two or three months later showed the astounding displacement of ventricles that is usually associated with a mature glioblastoma.

The third class of tumor that has come to my attention is, I must confess, precisely that which has been described today—a non-expanding, non-deforming, plasma-cell astrocytoma that insidiously replaces brain tissue with neoplastic astrocytes, and which histologically appears somewhat similar to astrocytic scar tissue in the type localized to the frontal lobe, and thus devoid of clues other than convulsions. The most recent patient with a tumor of this kind whom I can recall came under my care some 20 years ago, and in principle was identical with the one now under consideration as regards clinical features, the pathologic nature of the tumor and its location.

The patient was a young man referred by Dr. Rohner. He had been repeatedly examined and treated in the neurological out-clinic for unexplained seizures, progressive in severity and frequency, over a period of years. Neither focalizing neurological deficits nor evidence of increased pressure had ever presented themselves. Upon developing status epilepticus, he was admitted to the hospital. No one was surprised when a ventriculogram appeared normal. I later examined the film in subdued light, and found that it seemed there might be less air in the right anterior horn (part 1) than in the left. The shadows of part 1, as you know, are very dim in any case. Since the patient appeared to be doomed, a right frontal craniotomy was decided upon "for whatever it might be worth." When the cortex was uncovered, it appeared normal, but when I attempted to pass a ventricular needle into the lobe, the cause of the patient's long illness was immediately—and for the first time—evident. The lobe was leather-like in density. The frontal lobe was amputated and found to have been completely replaced by tumor astrocytes without deformation of its superficial topography. Recovery was uneventful, the patient became seizure-free and led a normal life to the time at which I lost contact with him. Much ado was made over this case, and I came to know it both in principle and in detail as well as I know my right hand, and yet, given the present case, I could do no more than place this possible diagnosis at the bottom of the list!

The all-important question is this: Should we rest complacent in the feeling that we are blameless because "the inherent nature of such pathosis makes correct diagnosis an impossibility and, therefore, no one else could have done any better," or is it possible that by critically analyzing our experience we can improve our judgment in respect to future possible cases of like kind? I think we should attempt the latter. Bear in mind that this is the old problem of unexplained convulsions in which the objective is to apprehend those cases of organic pathosis subject to possible surgical treatment.

I would sum up the moral lesson to be learned from the present case as follows: My error in judgment was clearly that of minimizing the one and only real clue in deference to an intuitive feeling. The EEG finding here is a real, objective fact, and should be quite sufficient not only to warrant but to command surgical exploration. We must forget all the negative findings and follow any positive clue that may fortunately exist, particularly if it is focalizing as this one was!

Dr. Robert A. Sedlacek, Neurology: Are there any comments about the electroencephalogram? It seems to be a pretty good clue.

Dr. Utterback: The electroencephalogram on February 2, 1956, was reported as showing recurrent right frontal slow activity—a very definite focal abnormality. It seems to me that this was a very good lead which might well have been followed up. I must say, however, that it is not too unusual to get a reading of an electroencephalogram like this, to become very much interested in following it up by carrying out various diagnostic procedures, and yet to fail at turning up any further evidence of pathology. In other words, an EEG abnormality of this kind may not necessarily indicate intracranial pathology. In retrospect, however, I wonder why it was not paid more heed.

Dr. Robert J. Joynt, Neurology: Do you mean intracranial pathology that we can demonstrate during the lives of our patients by tests?

Dr. Utterback: Yes, if a patient doesn't get worse, one assumes that he doesn't have a progressive lesion like a brain tumor. Sometimes we follow these in our out-clinic for long periods of time, and nothing more comes of them. About all that I can say in defense of the care that this patient had is that he was followed carefully for many months. When he reported that his seizures had stopped and that he was having no more headaches, I presume the doctor who saw him in the out-clinic felt that he was getting better. On the other hand, you may recall his pointing out a symptom that now seems to me very disturbing—his loss of memory. His wife reported that his behavior had altered. These signs apparently were not thought to be so important as the fact that his headaches had stopped and that he was no longer having spells.

Dr. Joynt: How often do you see convulsive seizures starting at 38 or 40 years of age and continuing for a year, followed by spontaneous recovery?

Dr. Utterback: That must be rather unusual. I'm sure it does happen, but it is not the sort of thing we expect. There is a sort of "rule of thumb" in neurology that when seizures begin in an individual 40 years of age or so, we must assume the presence of serious disease within the cerebrum until rather extensive testing has been carried out. This is particularly true if there happen to be focal seizures. Then, I think, it is mandatory that the tests such as angiograms, pneumoencephalograms or ventriculograms be carried out.

Dr. David Green, Neurology: Do you think it could be policy to do pneumoencephalograms on patients in whom seizures appear after the age of 20 years?

Dr. Utterback: That is a controversial question. If you were to ask it of several different neurologists, you'd get varied answers. Generally speaking, neurosurgeons tend to say, "Yes, every such patient should have a pneumoencephalogram." The medical neurologists tend to be less definite about this, and I think the reason is quite simple. Those of us in medical neurology see many seizure patients whom we follow for a time and decide are unlikely candidates for surgery on the basis of such diseases as abscess or hematoma. The patients whom we refer to the neurosurgeons are ones that we have "culled out," and a high percentage of them do have mass lesions.

It is probably a good rule, however, that unless there are some very special circumstances, every patient who begins having seizures in middle years—who has never had seizures before and has no obvious reason for having them, such as trauma—should have one of the special procedures eventually. Maybe one shouldn't be ordered the first time he is examined, but within months. That's my feeling about it.

Dr. Hyndman: I should like to have the electroencephalographer comment upon the EEG when an underlying subdural hematoma is present. Am I correct in assuming that, in principle, the wave amplitude is reduced without alteration (slowing) of the frequency?

Dr. Joynt: The finding that we sometimes see in the subdural hematoma is a suppression of the normal activity as the subdural fluid depresses the brain and we are recording through an area of greater resistance so that the voltage is less. But sometimes, associated with the subdural hematoma there is cortical damage in this area, so that the electrical activity may be slower along with the suppression.

Dr. Hyndman: Then it is not a thoroughly dependable sign?

Dr. Joynt: No.

Dr. Hyndman: I haven't yet answered the question that Dr. Utterback posed, namely, if a pneumogram had been made when the patient was first examined, is it conceivable that it might have ap-

peared normal. Now that I know the classification of the tumor (that which is sometimes called astrocytoma diffusum), and judging from former experience which I have described, I feel that it is quite conceivable that such a pneumogram might have appeared normal and, moreover, if one had been made a week prior to death, it is conceivable that it might still have appeared normal.

The pathologist is in position to provide us some real answers. I would, therefore, like to ask him these questions: When the right frontal cortex was exposed at autopsy, did it present a relatively normal topographic appearance of the convolutions and sulci, or was the usual evidence of an expanding tumor unmistakable? When the brain was sectioned, did the ventricles appear to be of normal size and position—such that, in your judgment, a pneumogram might have appeared normal? Or was the configuration otherwise?

Dr. Zimmerman: There was a little swelling and flattening of the convolutions and a little compression of the sulci. The tumor did not bulge appreciably. There was no alteration of the configuration of the ventricle.

Dr. Hyndman: Even at that late date?

Dr. Zimmerman: That's right.

Student: Aren't children just as likely to have subdurals, tumors and abscesses as are adults? Don't you feel that, excluding petit mal attacks, seizures in children should be equally well worked up?

Dr. Utterback: That is a very good question. Actually, it would seem that people with a tendency to have seizures from "excessive cortical irritability" are less stable in the early years of life. This is true especially during infancy and early childhood and then again during adolescence, and consequently we aren't usually as much concerned about seizures that begin in early childhood or seizures that begin in adolescence. Very frequently, we end up calling these "idiopathic"; in other words, no amount of investigation with our present tools will reveal the exact cause. The frequency with which tumor or abscess or hematoma is the etiology of these seizures is much lower than it is for seizures which begin in mature brains of adults. Thus, generally speaking, we are less concerned about these seizures beginning in childhood than we are with those beginning in adulthood.

There is another little point to be mentioned. It is that subdural hematoma is a disease of very young people and very old people. Strong young adults *may* have subdural hematoma, but in them we really expect epidural hematoma—in many cases clearly related to trauma. We don't think so often of subdural hematoma in this age group.

Dr. Paul M. Seebohm, Internal Medicine: What is the earliest manifestation of a frontal-lobe tumor? Is it a convulsive seizure, a personality change, some signs of increased intracranial pressure or a change in peripheral reflexes?

Dr. Utterback: I can tell you some things that it is *not*. Usually, it is not reflex alteration, and usually it is not increased intracranial pressure. It is very seldom headache. Usually, I should say, it is some vague alteration of behavior or convulsive seizures. This is quite a variable thing, of course, and many times frontal-lobe neoplasms

reach considerable size before they come to the attention of either the patient or the doctor.

ANATOMIC DIAGNOSES

- 1. Astrocytoma, Grade II, right frontal lobe
- 2. Epilepsy (clinical) due to the above
- 3. Pulmonary edema and hemorrhage, massive
- 4. Congestion of viscera.

Coming Meetings

Out of State

- July 3-5 **Fourth Congress, International Union of the Medical Press.** Cologne, Germany
- July 4-9 **American Society of X-ray Technicians.** Shirley Savoy Hotel, Denver
- July 5-7 **Impact of Surgery on Anesthesia.** U.C.L.A., Los Angeles
- July 6-8 **Obstetrics and Gynecology.** University of Colorado Medical Center, Denver
- July 6-8 **Third International Congress of School and University Health.** Paris, France
- July 6-9 **Ophthalmology (University of Colorado Medical Center.)** Aspen, Colorado
- July 6-10 **Eighth Annual Symposium for GPs on Tuberculosis and Other Chronic Pulmonary Diseases.** Saranac Lake, New York
- July 12-17 **International Congress on Plastic Surgery (British Association of Plastic Surgeons).** London, England
- July 15 **American Society of Facial Plastic Surgery.** New York City
- July 16-17 **Oregon Cancer Conference (Oregon State Medical Society, Oregon Division of the American Cancer Society, University of Oregon Medical School and the Oregon Academy of General Practice).** Library Auditorium, University of Oregon Medical School, Portland
- July 16-18 **Dermatology.** University of Colorado Medical Center, Denver
- July 17 **Minnesota Surgical Society.** Duluth
- July 18-24 **British Medical Association.** Edinburgh, Scotland
- July 19-25 **Ninth International Congress of Pediatrics.** Montreal
- July 20-24 **Pacific Northwest Obstetrical and Gynecological Association.** Banff, Alberta
- July 22-23 **Rocky Mountain Cancer Conference.** Brown Palace Hotel, Denver
- July 23-30 **International Congress of Radiology.** Munich, Germany
- July 24-25 **Infertility.** U.C.L.A., Los Angeles
- July 26-30 **International Psychoanalytical Association.** Copenhagen
- July 27-31 **First International Medical Conference on Mental Retardation.** Eastland Hotel, Portland, Maine
- July 27-31 **Shaio Foundation Symposium on Cardiovascular Disease.** Hotel Tequendama, Bogota, Colombia
- July 29-Aug. 15 **Second Annual Postgraduate Refresher Course, University of Southern California School of Medicine.** On board *The SS Lurline* and in Honolulu
- Aug. 3-14 **Annual Postgraduate Course, U. S. Section, International College of Surgeons and Cook County Graduate School of Medicine General Surgery Course.** Cook County Graduate School of Medicine, Chicago
- Aug. 5-15 **Second Annual Health Exposition (New York City Department of Health).** New York Coliseum, New York City
- Aug. 9-15 **International Congress of Physiological Sciences.** Buenos Aires, Argentina
- Aug. 10-12 **Athletic Injuries.** University of Colorado Medical Center, Denver
- Aug. 10-13 **National Medical Association.** Detroit
- Aug. 16-19 **Pediatric Cardiology.** U.C.L.A., Los Angeles
- Aug. 17-18 **Symposium on the Prevention and Treatment of Athletic Injuries (Department of Physical Education and the Health Service).** University of Rhode Island, Kingston

- Aug. 17-22 **International Congress for Speech & Voice Therapy.** London, England
- Aug. 19-22 **Annual Session, Nevada State Medical Association, with the Reno Surgical Society.** Mapes Hotel, Reno
- Aug. 19-23 **Emotional Problems in Office Practice.** U.C.L.A., Los Angeles
- Aug. 20-21 **Annual AMA Public Relations Institute.** Chicago
- Aug. 20-22 **Rocky Mountain Radiological Society.** Shirley-Savoy Hotel, Denver
- Aug. 20-22 **West Virginia State Medical Association.** The Greenbrier, White Sulphur Springs
- Aug. 20-Sept. 8 **International Association of Limnology.** Vienna and Salzburg, Austria
- Aug. 23-26 **Internal Medicine.** U.C.L.A., Los Angeles
- Aug. 23-26 **Symposium on the Catechol Amines in Cardiovascular Pathology.** University of Vermont College of Medicine, Burlington
- Aug. 24-27 **American Hospital Association.** Statler Hotel, New York City
- Aug. 25-28 **American Dietetic Association.** Statler Hilton, Los Angeles
- Aug. 29-Sept. 4 **Second World Conference on Medical Education (World Medical Association, World Health Organization, Council for International Organization of Medical Sciences, and International Association of Universities).** Palmer House, Chicago
- Aug. 30-Sept. 4 **Thirty-seventh Annual Scientific and Clinical Session, American Congress of Physical Medicine and Rehabilitation.** Hotel Leamington, Minneapolis
- Aug. 30-Sept. 5 **World Federation for Mental Health.** Barcelona, Spain
- Aug. 30-Sept. 6 **International Congress for the History of Science.** Barcelona and Madrid, Spain
- Aug. 31-Sept 3 **Biological Photographic Association, Inc.** Sheraton-Mount Royal Hotel, Montreal, Canada

DES MOINES MERCY DEDICATION,
SEPTEMBER 23

A number of outstanding guest speakers will be in Des Moines to participate in the dedication of Mercy Hospital's enlarged and remodelled building on September 23. Dr. Charles W. Mayo, professor of surgery at the Mayo Foundation and University of Minnesota Graduate School, will speak on diverticulitis; Dr. Charles J. Smith, of Chicago, assistant clinical professor of obstetrics at the Stritch School of Medicine, Loyola University, will discuss complications of pregnancy; Dr. Arnold S. Jackson, director of the Jackson Clinic, Madison, Wisconsin, and past president of the International College of Surgeons, will speak on some aspects of goitre; and Mr. Arthur S. Flemming, secretary of the U. S. Department of Health, Education and Welfare, will speak on a subject that is yet to be announced.



DOCTOR'S INTERLUDE

How many of you doctors have wished for just a few hours' respite from the daily grind and pressure of your practice? I don't mean to suggest that you are unhappy as doctors, but rather that occasionally you'd like to refresh yourselves with a change of scenery or with the companionship of others, not in a recreational activity but in a joint endeavor on a project having no direct relation with the field of medicine.

Oftentimes, I have felt that we doctors live a circumscribed life, devoid of normal relations with normal people in other walks of life. We develop one-track minds, always diagnosing or treating the ills of others and never thinking of how we appear in the eyes of others. To many of our fellow citizens we must appear selfish, egotistical and aloof. Have you ever noticed how many doctors "live medicine" 24 hours of the day—even limiting their social evenings to companionship with their physician colleagues? If we knew how we looked to others, perhaps we might be willing to change our way of living. Besides, if we are to improve our ability to understand and solve the problems of our patients, we need to take every opportunity to learn how people in other walks of life live and think.

We can most easily begin working *with* as well as *for* other people by enlisting ourselves in community projects. Recently, I was asked to be a candidate for election to our local school board. I was reticent at first, thinking that I was too busy and that nothing should be permitted to interfere with my work as a doctor. However, after repeated nudgings from my friends and even from my dear wife, I entered the race. Lo and behold, I was elected, and all of a sudden I found myself in the midst of the problems involved in educating 25,000 students and in spending approximately \$17,000,000 annually. I never before had realized that so many problems existed, or that they affected the lives of so many. These problems had no direct relation with medicine, and yet the knowledge I had gained as a doctor aided the other board members and me in solving them.

I can truthfully say that when I am attending a school board meeting, I completely forget being a doctor. Yet, I don't feel that in doing so I am neglecting my profession, for I am doing something

worthwhile, and when I return to my office after a four-hour session, I am completely refreshed and can reenter my medical work with renewed vigor and enthusiasm. By projecting myself into public school work, I feel that I am making a better doctor of myself, and I take this opportunity of urging each of my fellow physicians to think twice before he refuses to work on some community project simply because he is too busy or because he thinks his taking some time for specifically civic activities will diminish rather than increase his usefulness to his community.

Remember how you must look in the eyes of your fellow citizens if you insist on always working *for* them rather than *with* them!

F. M. B.

TRAFFIC ACCIDENTS

Before the Memorial Day weekend, Mr. Russell Brown, the state safety director, refused to forecast the number of Iowans who would die on the highways during the holiday driving, though the National Safety Council had once more issued such a figure for the nation as a whole. In the first place, he said, Iowa is too small an area about which to make such a prediction. Second, such prophecies do no good at all, for no one even dreams that he himself may be one of the anticipated fatalities. And third, the mortality is ceasing to be a true index of the seriousness of the traffic-accident problem, for doctors are growing more and more successful at saving the lives of individuals whom the mishaps haven't killed instantaneously.

Mr. Brown is perfectly right, and on behalf of the physicians of the state, we want to thank him for making that last point. We'll admit that we had thought of it ourselves, but we are grateful to him for calling it to public attention.

But let's return for a moment to consider the problem of preventing automobile accidents and the methods being used in solving it. The "big scare" is a generally ineffective way of dealing with evils of all sorts. Indeed, the editors of *NORTHWEST MEDICINE*, in their May issue, drew a parallel between the scareheads employed by the Travelers Life Insurance Company and the National Safety Council, and the antics with which Indian medicine men attempted to exorcise "bad spirits." Perhaps Mr. Brown's technic of massing his patrolmen at particular places and times may do somewhat more good, but that too is a device calculated to evoke fear—in this instance, a fear of arrest. Strict law enforcement is a good thing in itself, but neither it nor levying severe punishments upon conviction has ever come close to eliminating wrongdoing.

Positive measures designed to prevent automobile accidents haven't yet been given a trial, and they deserve one, provided the people of Iowa are willing to acknowledge that the lives and

health of thousands of people deserve to outweigh the liberty of relatively small numbers of individuals to continue driving automobiles recklessly.

The records show that truck drivers as a group are both expert and careful. Nearly every one of them succeeds in driving his unwieldy vehicle hundreds of thousands of miles without a "chargeable" accident. Taxicab drivers build up similar records. Are these mere coincidences? No, the explanation is that a hired driver doesn't stay hired very long if he lacks technical proficiency or if he is inclined to make light of his responsibilities.

Perhaps we should have laws under which judges might emulate the owners of truck or taxicab fleets—that is to say, laws under which they might "ground" drivers who have repeatedly exhibited irresponsibility or who have repeatedly demonstrated inability to control their cars. The current practice of lifting a driver's license for 30 or 60 days is surely punishment for the offender—provided that Mr. Brown and his officers see to it that he doesn't drive without one. But depriving him of a license for a year or even longer would be a means of keeping such an individual from maiming or killing his law-abiding fellow citizen.

PLEASE ANSWER YOUR QUESTIONNAIRE

The ISMS staff has mailed a copy of a brief questionnaire to each member of the Society and to each eligible non-member M.D. in the state. The information that has been asked for is highly essential, and answers must be secured from all doctors—not from just a few or even from a mere majority of them. If you haven't already mailed your reply, please do so *now*!

First, the Society should have minimum biographic information in its files on each physician presently practicing in the state.

Second, the ISMS Committee on Legislation and Committee on Rural Health need to have accurate and up-to-date figures on the current distribution of physicians, county by county. To facilitate accurate predictions of the future adequacy of medical care, they need to know the ages of the doctors who are now practicing in the various localities, the numbers of them who limit their practices in each of various ways, and the numbers who are available, county by county, to meet the general medical and surgical needs of the population.

Third, the ISMS committees and the dean and faculty of the S.U.I. College of Medicine would like to know how substantial are the numbers of S.U.I. medical graduates who interned or started practice outside the state, but have subsequently returned to practice in Iowa.

Answering the questions should take you no more than three or four minutes. Your cooperation is needed.

EXCESSIVE GOVERNMENTAL SPENDING

Forty-five billion dollars a year being spent on social welfare are both a cause and an effect of America's creeping inflation, eroding away half the U. S. dollar's value in just 20 years. And as much as half of this astronomical outlay relates to Society Security, government health programs and health-caused retirement, dwarfing even the defense budget. Most Americans don't realize that social welfare amounted to 42.5 per cent of all money spent by federal, state and local governments (\$115,200,000,000) in 1957.

The Insurance Economics Society, a forthright independent organization, intimates that the U. S. is becoming the "land of the free *handout*." Describing the welfare-state trend in its February bulletin, it said that "... in all, at least a third of the U. S. population must have depended wholly or partly upon social welfare programs in these three years (1955-1957) of unprecedented prosperity. And, if the present trends are projected a few years, it becomes obvious that half the people in the U. S. soon will be carrying the other half on their backs."

Look, for example, at the 1957 welfare scoreboard:

Six million families—totalling 24,000,000 persons—received public assistance, which included old age, disability, aid to dependent children, aid to the blind and general assistance.

Ten million Social Security recipients—now there are 12,000,000—on retirement payments, survivors' pensions and cash disability payments. This is the group the Forand Bill would "cover."

One million unemployed—now 2,000,000—receiving federal-state benefits weekly.

Almost 3,000,000 veterans—more than 10 per cent of all living Americans who have ever worn uniforms—received compensation and pension payments.

About 1,000,000 civil service and Railroad Retirement Act beneficiaries received "tax-dollar" pensions, too.

The Social Security Administration admits the existence of an "actuarial insufficiency" for last year—that's bureaucratic lingo for paying out more than came in. The deficit was a quarter of a billion tax dollars, but the real red ink in the operation was 300 per cent of that figure, since \$500,000,000 of Social Security's income is from interest on government bonds in which its "trust fund" is invested. By extending the taxable wage base from \$4,200 to \$4,800 and upping the tax on employee and employer this year, SS officials say they'll be in the black. Facts of rapidly aging population, wild benefit increases pending before Congress, and the weird way the government does business bear out nothing except the trend toward more deficit spending.

—Editorial, NEBRASKA MEDICAL JOURNAL, 44:267, (June) 1959.

Actions of the AMA House of Delegates

Atlantic City, June 8-12, 1959

The report of the AMA Commission on Medical Care Plans, relations between medicine and osteopathy, the report of the Committee on Preparation for General Practice and the issue of compulsory Social Security coverage for self-employed physicians were among the major subjects which brought important policy actions by the House of Delegates at the American Medical Association's 108th Annual Meeting, held June 8-12 in Atlantic City.

Another highlight of the meeting was the appearance of President Dwight D. Eisenhower, who addressed an overflow audience of more than 5,000 at the Tuesday night inauguration of Dr. Louis M. Orr, of Orlando, Florida, as the 113th president of the AMA. It marked the first time that a President of the United States has addressed an AMA annual or clinical meeting.

Dr. E. Vincent Askey, of Los Angeles, speaker of the House of Delegates since 1955, was named president-elect for the coming year. Dr. Askey will succeed Dr. Orr as president at the association's annual meeting in June, 1960, at Miami Beach.

The 1959 Distinguished Service Award of the American Medical Association was voted to Dr. Michael E. De Bakey, of Houston, Texas, chairman of the Department of Surgery at Baylor University College of Medicine, for his outstanding contributions in the field of cardiovascular surgery. Dr. De Bakey received the award at the Tuesday night inaugural ceremony.

Total registration through Thursday, with half a day of the meeting still remaining, had reached 28,225, including 12,921 physicians.

EISENHOWER ADDRESS

President Eisenhower, speaking at the inaugural ceremony in the ballroom of Convention Hall, warned that inflation poses the greatest danger to the traditional, free enterprise practice of medicine. The cost of inflation, he said, "is not paid in dollars alone, but in increasingly stagnated progress, in lost opportunities, and eventually, if unchecked, in lost freedoms for the doctor and the patient." Mr. Eisenhower also expressed gratification at learning of AMA leadership in the program to meet the health care needs of the aged.

COMMISSION ON MEDICAL CARE PLANS

The House of Delegates received Part I of the report of the Commission on Medical Care Plans as information only, and then acted upon the Commission recommendations item by item. The

House adopted 36 of the recommendations without change, but reworded three which relate to miscellaneous and unclassified plans. The changed recommendations now read as follows:

B-4. "In an effort to decrease, or at least to prevent an increase, in the over-all cost of health care, study should be given to the removal of the requirement of hospital admission as the only condition under which payment of certain benefits will be made."

B-6. "Medical care plans should be encouraged to increase their efforts to provide health education and information concerning the coverage of their subscribers."

B-16. "The American Medical Association believes that free choice of physician is the right of every individual and one which he should be free to exercise as he chooses. Each individual should be accorded the privilege to select and change his physician at will or to select his preferred system of medical care, and the American Medical Association vigorously supports the right of the individual to choose between these alternatives."

In connection with free choice of physician, the House also requested the Board of Trustees to transmit to all constituent medical associations the "far-reaching significance" of Recommendation A-7, which says:

"'Free choice of physician' is an important factor in the provision of good medical care. In order that the principle of 'free choice of physician' be maintained and be fully implemented, the medical profession should discharge more vigorously its self-imposed responsibility for assuring the competency of physicians' services and their provision at a cost which people can afford."

The House also strongly endorsed Recommendation B-11, which declares that "Those who receive medical care benefits as a result of collective bargaining should have the widest possible choice from among medical care plans for the provision of such care."

Many of the Commission's recommendations urged increased activity by state and county medical societies and the American Medical Association in such fields as continuing study and liaison, closer attention to legal and legislative factors, and the development of guides for the relationship between the medical profession and the various types of third parties. To carry out three of the recommendations involving AMA activities, the House also approved a seven-point program which it requested the Board of Trustees to transmit to the Division of Socio-Economic Activities for immediate attention.

MEDICINE AND OSTEOPATHY

In considering a special report of the Judicial Council on the subject of osteopathy, the House adopted the following policy statement regarding interprofessional relations:

"(A) All voluntary professional associations between doctors of medicine and those who practice a system of healing not based on scientific principles are unethical.

"(B) Enactment of medical practice acts requiring all who practice as physicians and surgeons to meet the same qualifications, take the same examinations and graduate from schools approved by the same agency should be encouraged by the constituent associations.

"(C) It shall not be considered contrary to the Principles of Medical Ethics for doctors of medicine to teach students in an osteopathic college which is in the process of being converted into an approved medical school under the supervision of the AMA Council on Medical Education and Hospitals.

"(D) A liaison committee [shall] be appointed by the Board of Trustees of the American Medical Association to meet with representatives of the American Osteopathic Association, if mutually agreeable, to consider problems of common concern, including inter-professional relationships on a national level."

In another action concerning osteopathy, the House recommended that the American Medical Association's representatives on the Joint Commission on Accreditation of Hospitals suggest to the Joint Commission that it inspect, upon request, and consider for accreditation without prejudice those hospitals required by law to admit osteopathic physicians to their staffs.

PREPARATION FOR GENERAL PRACTICE

The House approved and commended the final report of the Committee on Preparation for General Practice, which proposes a new two-year internship program for medical school graduates planning to become family physicians. To avoid unnecessary confusion, the House deleted only one sentence, which read: "Indeed, the committee believes that the one year internship actually encourages inadequate preparation for general practice." The Committee on Preparation for General Practice included representatives from the AMA Council on Medical Education and Hospitals, the American Academy of General Practice and the Association of American Medical Colleges.

The suggested program would include a basic minimum of 18 months' hospital training in the diagnostic, therapeutic, psychiatric, preventive and rehabilitative aspects of medicine and pediatrics in a very broad sense, including care of the newborn. A physician then could elect the subjects to which he wished to devote the remaining six months. The committee stated, however, that participants who plan to practice obstetrics would

be expected to spend at least four months of the elective period in obstetrical training.

The report declared that "the graduate program of two years in preparation for family practice should be planned and implemented as a unified whole," with a maximum continuity of assignment in specific services. The program also calls for adequate experience in outpatient care and emergency-room service.

SOCIAL SECURITY

In considering five resolutions on the subject of compulsory Social Security coverage for self-employed physicians, the House disapproved of four and adopted one of them, reaffirming its opposition to the compulsory inclusion of physicians. In so doing, the delegates expressed concern over the possible effects that a change of policy might have on the Association's entire legislative program, particularly with respect to the Forand Bill.

The House also recognized "the apparent growing demand by physicians for economic security" and requested the Board of Trustees to investigate the possibilities of developing group insurance and retirement plans which could be made available to Association members. It accepted a reference committee suggestion "that the American Medical Association continue and expand its educational program to inform its members of the economic, social and moral advantages of economic security obtained within the framework of our free enterprise system, rather than through the mechanisms of governmental Social Security."

MISCELLANEOUS ACTIONS

In dealing with a wide variety of other subjects, the House also: Urged all physicians to participate more fully in community activities and *socio-economic matters* in their own communities but agreed that no change should be made at this time in Article II of the Constitution, which states Association objectives;

Approved in principle the aims and objectives of the President's Council on *Youth Fitness* and the Citizens Advisory Committee on the Fitness of American Youth;

Accepted a Board of Trustees recommendation that the 1962 *Annual Meeting* be held in Chicago;

Expressed heartfelt thanks to the Committee on *Amphetamines* and *Athletes*, which has completed its assignment;

Requested the Board of Trustees to study the problems and possibilities of establishing an AMA-sponsored *medical scholarship* and/or loan program;

Recommended that state medical societies, where advisable, initiate legislative efforts to eliminate *cancer quackery*;

Received a progress report indicating "phenomenal progress" in the field of health insurance coverage for *the aged* since the Minneapolis meeting last December.

President's Page

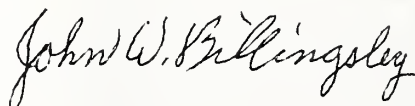
During May, at the annual Senior Day which the Iowa State Medical Society presents at the S.U.I. College of Medicine, several other private practitioners and I had an opportunity to meet and talk with more than 100 young men, many of whom we hope will shortly join us in protecting the health of the people of Iowa. We were very favorably impressed with them, and were pleased, besides, to make the acquaintance of their charming ladies.

One frankly acknowledged purpose of Senior Day is to acquaint our medical school seniors with the opportunities that await them right here in Iowa to help people in general, to help their medical colleagues, and to help their own families and themselves. Iowa needs more doctors, especially in its small towns, and in choosing to locate in one of them a young physician will help to reassure the public that the medical profession as a whole intends to continue caring for the sick, everywhere and all of the time. Moreover, none of them needs fear that he will be making a financial or social sacrifice in choosing such a place to work and live.

Another no less openly avowed purpose of Senior Day is to familiarize men who are about to finish medical school with the functions of county, state and national medical organizations, and to make them anxious to join in the activities of such groups. Doctors of medicine—all of us, not just a few or even a bare majority—must unite immediately and wholeheartedly if the practice of medicine is to be preserved in its traditional and virtually ideal form, and if our nation is to be saved from the multiplication of bureaucracy and the financial collapse that the nationalization of health care would produce.

Each of you who served as preceptor for a member of the class that graduated in Iowa City last month knows at least one of those prospective physicians pretty intimately. If you will, we'd like you to write to him, pointing out the attractions of a practice that is open in your own or in a nearby community, and perhaps offering to be his host once more for the length of time it takes him to investigate the possibilities for himself. If the officers or staff of the Society can help you, please feel free to ask our assistance.

The physician-distribution problem is an important one, as you will see from reading Dean Nelson's report to the April meeting of the House of Delegates on pages 461-463 of this issue of the JOURNAL. If it is to be solved, the help of every member of the Society is needed.



President

THE JOURNAL *Book Shelf*



BOOKS RECEIVED

TRAUMA, by *Harrison L. McLaughlin*, M.D. (Philadelphia, W. B. Saunders Company, 1959. \$18.00).

PREVENTIVE MEDICINE: PRINCIPLES OF PREVENTION IN THE OCCURRENCE AND PROGRESSION OF DISEASE, ed. by *Herman E. Hilleboe*, M.D., and *Granville W. Larimore*, M.D. (Philadelphia, W. B. Saunders Company, 1959. \$12.00).

THAT THE PATIENT MAY KNOW: AN ATLAS FOR USE BY THE PHYSICIAN IN EXPLAINING TO THE PATIENT, by *Harry F. Dowling*, M.D., and *Tom Jones*, B.F.A. (Philadelphia, W. B. Saunders Company, 1959. \$7.50).

HYPERTENSIVE DISEASE: PROGNOSIS AND TREATMENT, by *Sibley W. Hoobler*, M.D. (New York City, Paul B. Hoeber, Inc., 1959. \$7.50).

THE YEAR BOOK OF ORTHOPEDICS AND TRAUMATIC SURGERY (1958-1959 YEAR BOOK SERIES), ed. by *Edward L. Compere*, M.D. (Chicago, The Year Book Publishers, Inc., 1959. \$7.50).

AIDS TO NEUROLOGY, SECOND EDITION, by *E. A. Blake Pritchard*, M.D. (Baltimore, Williams & Wilkins Company, 1959. \$4.00).

INSULIN TREATMENT IN PSYCHIATRY, ed. by *Max Rinkel*, M.D., and *Harold E. Himwich*, M.D. (New York City, Philosophical Library, Inc., 1959. \$5.00).

THE YEAR BOOK OF ENDOCRINOLOGY (1958-1959 YEAR BOOK SERIES), ed. by *Gilbert S. Gordan*, M.D. (Chicago, The Year Book Publishers, Inc., 1959. \$7.50).

HYPERTENSION, THE FIRST HAHNEMANN SYMPOSIUM ON HYPERTENSIVE DISEASE, ed. by *John H. Moyer*, M.D. (Philadelphia, W. B. Saunders Company, 1959. \$14.00).

PATIENT CARE AND SPECIAL PROCEDURES IN X-RAY TECHNOLOGY, by *Carol Hocking Vennes*, R.N., and *John C. Watson*, R.T. (St. Louis, C. V. Mosby Company, 1959. \$5.75).

A TEXTBOOK OF MEDICINE, TENTH EDITION, ed. by *Russell L. Cecil*, M.D., and *Robert F. Loeb*, M.D. (Philadelphia, W. B. Saunders Company, 1959. \$16.50).

BOOK REVIEWS

A HISTORY OF NEUROLOGY, by *Walther Riese*, M.D. (New York City, MD Publications, Inc., 1959. \$4.00).

Dr. Felix Marti-Ibanez, editor-in-chief of *M.D. MEDICAL NEWS*, is now sponsoring the *M.D. MONOGRAPHS ON MEDICAL HISTORY*. The present volume is a history of ideas, rather than a chronological cataloging of men and events.

In the foreword, Dr. Marti-Ibanez points out that in the history of neurology, there has been a basic conflict "between philosophic tradition and the empiric observation of patients." The nervous system has been accorded a dual function: (1) the internal regulation of the body and (2) the external adjustments of the body to its environment and to God. Hence, metaphysical concepts have influenced physiologic thinking in neurology to a greater extent than in other branches of medicine. This "curious dichotomy" has delayed progress in our understanding of nervous-system function.

Dr. Riese first traces the historical development and analyzes basic concepts in nervous-system function. The history of the nervous impulse and of the reflex action are then considered in separate sections. The history of the doctrine of cerebral localization and the rediscovery of the whole comprise sections four and five. The concluding four sections detail pain in neurology, diagnosis, prognosis and therapy. The book also includes a detailed bibliography, a chart of neurological chronology (which correlates a selected list of eminent neurologists with the history of civilization), and lists of neurological journals and societies.

This is no ordinary history. Dr. Riese is a neurologist, historian and philosopher of many years' standing. Nervous function is described as "a kind of motion," and the knowledge of this function is related in terms of man's search for this knowledge. "History must be philosophy if its delicate fabric is to have any meaning," Dr. Riese maintains.

The book is compact and relatively inexpensive. One need not be a neurologist to appreciate the scholarlyness of the presentation and to find it intensely interesting. The volume is recommended enthusiastically.—*John T. Bakody*, M.D.

VASCULAR SPIDERS AND RELATED LESIONS OF THE SKIN, by *William B. Bean*, M.D. (Springfield, Illinois, Charles C Thomas, 1959. \$8.50).

The author's attention has been partly focused on vascular lesions of the skin throughout the past 20 years, and thus it is only fitting that he, who knows more about these phenomena than anyone else in this country, should describe them for posterity. At least he has "resuscitated if not discovered many interesting vascular lesions."

The book is a rather small one, with large print and many illustrations, mostly in black and white. It describes "Spiders and Palmar Erythema," "Vascular Lesions Caused by Humoral Mechanisms," congenital lesions, functional flushes, and those associated with neoplasms, trauma and aging.

It is difficult to assay the work of a friend, for one is always biased in his favor, but I am happy that he has gathered his material together for this book. Superficial vascular lesions, though quite obvious, often escape the visual and psychic attention of the doctor. Dr. Bean has garnered them for us so that we may consider the significance of these lesions in terms of general body function. He discusses such questions as "What do these lesions mean?" "Why do they appear?" and "Why do they disappear?" Even though he may not have provided final answers in all instances, he has prompted us to begin considering the physiochemistry of these usually transient but sometimes permanent lesions.

The book is timely in that we are just beginning something beyond the mere description of morbid changes—just now testing our wings as regards looking for causations. The book is excellently written and offers many provocative concepts for the thinking internist—particularly for one who is interested in the physiochemistry of disease.—*Daniel A. Glomset, M.D.*

DISEASES OF THE COLON AND ANORECTUM, TWO VOLS., ed. by *Robert Turell, M.D.* (Philadelphia, W. B. Saunders Company, 1959. \$35.00).

Dr Turell has assembled the efforts of 82 recognized authorities in this two-volume text on diseases of the lower gastrointestinal tract.

Although his avowed purpose was not to create an encyclopedic work, he has come close to achieving that objective. Each clinical entity is discussed in detail from the standpoints of pathogenesis, etiology, signs and symptoms, diagnosis and treatment. Operative technics are included when applicable.

The entire text is liberally, profusely and very clearly illustrated, and the type is large and readable.

Although obviously designed for the surgeon, this work should be extremely useful to the internist and gastroenterologist who commonly are consulted first regarding the majority of these complaints.

I predict that these volumes will become "well-thumbed" stand-bys in the library of any physician who takes the trouble to acquaint himself with them.—*Samuel J. Zoeckler, M.D.*

WORLD MEDICAL EDUCATION CONFERENCE IN CHICAGO

Patterns of success and patterns of failure in the great cooperative movement to improve the health care of people everywhere will be exchanged and compared when medical educators from 50 different countries gather in Chicago for the Second World Conference on Medical Education, August 29 to September 4.

"This seven-day meeting, jointly sponsored by the great world bodies of medicine, will provide a common ground for the free exchange of scientific information and experiences between countries," says Dr. Louis H. Bauer, of New York, secretary-general of the World Medical Association.

The conference is to be held under the auspices of the WMA, which is now composed of 55 national medical associations representing about 700,000 physicians. Collaborating with the WMA will be the World Health Organization, the Council for International Organizations of Medical Sciences, and the International Association of Universities.

President Eisenhower has been invited to address the opening plenary session on Monday, August 31, and there will be 125 other speakers from about 50 countries. All business, including lectures, will be translated simultaneously so that those in attendance may hear in their choice of English, French or Spanish. Between 1,500 and 2,000 per-

sons from the free world are expected to attend, and in addition, although non-members of WMA, Russia and Poland will send delegations.

A variety of subjects dealing directly or indirectly with medical education will be covered during four section sessions. The subject titles for those sections are: 1. Basic Clinical Training for All Doctors. 2. Advanced Education for General and Specialty Practice. 3. The Development of Teachers and Investigators. 4. Continuing Medical Education.

NO GENETIC DAMAGE FROM X-RAYS

Women treated for infertility or sterility by means of x-rays will be reassured by a 33-year study which has been made by Dr. Ira I. Kaplan, a New York radiologist, and which shows that "no increase in genetic damage was found in 644 married women given approximately 65r to the ovaries and following from one to 33 years.* The incidence of genetic damage to the children and grandchildren of this group is less than that of the normal population."

In this treated group, 351 women had a total of 688 pregnancies. All of them had been referred by gynecologists only after all other methods for the relief of sterility had been tried and had failed. Fifty-seven per cent of the patients had been sterile from four to 10 years prior to treatment, and 43 per cent from 11 to 19 years.

There were 543 normal, healthy, living children of the 566 born to the 351 women who conceived. Twenty children had died at or after birth, and three children are alive with abnormalities. The October, 1958, report of the National Office of Vital Statistics shows a fetal death rate of 16.6 per cent. In this series, the rate is 20.6 per cent, but it should not be overlooked that these women were not deemed normal before therapy, Dr. Kaplan pointed out.

It has been said that irradiation of women tends to create a condition of sterility in their offspring. To date, this has not been evident in Dr. Kaplan's study group. At present, 35 children of the original patients are married, and 34 of these already have had a total of 49 normal children—i.e., grandchildren of the originally irradiated women. Forty-eight of these grandchildren are alive; one died shortly after birth.

"All these grandchildren of irradiated women are physically and mentally well," Dr. Kaplan declared. "There has been no cancer or leukemia of any type noted in any of the children or grandchildren of the irradiated women over the course of the past 33 years. Some of these children are now past 30 years of age."

*Kaplan, I. I.: Genetic effects in children and grandchildren of women treated for infertility and sterility by roentgen therapy. *RADIOLOGY* 72:518-521, (Apr.) 1959.

THE DOCTOR'S BUSINESS

How Is Your Estate Planned?

HOWARD D. BAKER
WATERLOO



Although a great deal has been written on the subject of estate planning, it is one that is often neglected. Proper estate planning often achieves thousands of dollars of estate-tax savings.

The marital deduction is the first step in a workable estate plan. Several years ago, provisions were established making it possible to reduce extra estate taxes substantially through the proper qualification of assets. These provisions grant a deduction from the gross estate equal to the value of property passing to the decedent's spouse outright, with full power of appointment, up to a limit of 50 per cent of the value of the estate.

By taking advantage of this deduction, one can add considerably to the share of a large estate that will actually become available to the beneficiary, and can effect substantial savings even on small estates.

For example, if Dr. Smith has assets valued at \$120,000, use of the marital deduction could save \$9,340 for his wife in the event of his death:

	Marital Deduction Not Used	Marital Deduction Used
Gross estate	\$120,000	\$120,000
Specific exemption	60,000	60,000
Net estate	\$ 60,000	\$ 60,000
Marital deduction (50 per cent of gross estate)		60,000
Subject to tax	\$ 60,000	None
Federal estate tax	9,340	None

Beware of the tax trap on large estates. Many men leave their entire estates to their wives, and if the gross value is in excess of \$120,000 they incur tax losses. Remember that the marital deduction is limited to 50 per cent of the value of the estate. If you leave your wife a greater share, the property in excess of 50 per cent will

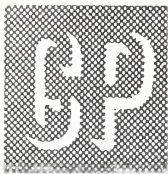
be taxed in your estate, and will be taxed a second time in her estate if it has not been exhausted during her lifetime.

A way of avoiding this trap is to leave one's wife one-half the estate outright, to qualify for the maximum marital deduction, and then place the other half in a trust so designed as to give her all the benefits of the income and principal, but to avoid incurring taxes in her estate. Under such a trust, she can receive all income during her lifetime and can be paid sums from the principal for purposes stipulated in the trust agreement.

The remainder of the trust, upon her death, will pass untaxed to the beneficiaries originally named in her husband's will (usually the children). On a \$200,000 estate, the tax pictures would be as follows:

	100% to Wife	50% to Wife 50% to Trust
Gross estate	\$200,000	\$200,000
Specific exemption	60,000	60,000
Net estate	\$140,000	\$140,000
Marital deduction	100,000	100,000
Doctor's taxable estate	\$ 40,000	\$ 40,000
Federal estate tax	\$ 4,800	\$ 4,800
Wife's gross estate, provided that she has lived on the income and has retained the entire principal	\$195,200	\$100,000
Specific exemption	60,000	60,000
Wife's taxable estate	\$135,200	\$ 40,000
Estate tax	\$ 31,000	\$ 4,800
Tax savings through use of trust		\$ 26,200

Obviously, proper planning of your estate can thus mean many additional thousands of dollars for your family. You can see that technical errors could be quite costly. Thus, it is advisable for you to consult your attorney for help in setting up your program.



Iowa Academy of General Practice

DOCTOR, LOOK AT YOUR OFFICE!

The average physician hasn't really taken a close look at his office for several years. Have you? Too often, a physician's office staff and the functions they perform have just "grown like Topsy," with little consideration being given to the adequacy of the space they occupy or to their overall efficiency. Being busy, the physician has added people to his staff, from time to time, to attend to the bookkeeping and to handle the ever-increasing load of insurance forms, and has left less and less room for his patients.

Doctor, make a survey of your office, beginning at the front door. Consider the adequacy of your waiting room, consulting room, and examining and treatment rooms, and give some thought to the way in which your employees are conducting your business.

Too often, though a physician's practice grows and the numbers of his patients increase, his reception room isn't enlarged. Does yours still have adequate seating? Nothing makes patients more restless or generally dissatisfied than having to stand. Usually the doctor finds it impossible to avoid requiring people to wait at least for a short time, but if they are made comfortable, their waiting time doesn't seem long. Are your magazines old, tattered and torn? If smoking is permitted in your waiting room, are there adequate ash receptacles? Are there facilities for getting coats, hats and galoshes out of the way, or do such articles of clothing occupy chairs and floor-space, and clutter up the place generally during the winter months? Is the temperature maintained at a comfortable level? Are the walls drab? What can be done to make the room more attractive? And when you have answered those questions, DO something to improve the situation!

Now, take a few moments to observe and to think about your employees' dealings with your patients. Does your receptionist use a train-caller's tone of voice in talking with the people waiting in your outer office? The personality of the receptionist has a far greater importance than anyone realizes—except the patients. Does the receptionist practice good telephone manners? If so, she undoubtedly is the physician's best goodwill ambassador.

Does your consultation room really encourage

confidences? Is it really private, or having heard snatches of conversation through its walls as they sat in your reception room, do patients have reason to fear that as they talk with you they may be telling the public their secrets? Is your desk piled high with junk mail, or is it as it should be—free of everything that isn't necessary? Do the patient's surroundings suggest your desire to be of help?

Do your examination and treatment rooms contain adequate facilities, and are they up-to-date? Is there a place for the patient to sit; is there a place where he can hang his clothes; and do you provide him proper clothing for examination? Is the equipment in the room suited for your needs? Are instruments placed so as to spare you unnecessary movements? By avoiding fatigue, you enable yourself to serve your patients better.

Is your bookkeeping system antiquated, or do you have a modern system in which all entries can be checked and double-checked? Are your books audited at least once a year, and are spot checks made between times? The percentage of your collections will increase if your bookkeeper has the sort of personality and tact that are ideal for her job.

Doctor, do you supervise your office as you should? Or if you delegate that job to an office manager, is he or she completely capable? Is there harmony among your office personnel? Are they paid adequate salaries?

Doctor, look at your office! Take an inventory each year, and you will be surprised at the improvements you can make in it for the benefit of your patients, your office personnel and yourself.

Please Mark Your Calendar

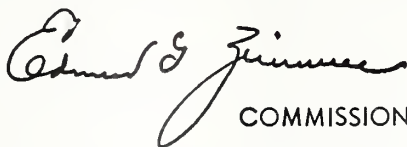
ISMS ANNUAL MEETING

April 24-27, 1960

Veterans' Memorial Auditorium

Des Moines

STATE DEPARTMENT OF HEALTH


COMMISSIONER

MORBIDITY REPORT FOR MONTH OF MAY, 1959

Disease	1959 May	1959 April	1958 May	Most Cases Reported From These Counties
Diphtheria	0	0	7	
Scarlet fever	293	396	247	Cerro Gordo, Des Moines, Johnson, Polk
Typhoid fever	0	0	0	
Smallpox	0	0	0	
Measles	1,426	2,014	4,599	Buena Vista, Clay, Polk, Scott
Whooping cough	23	48	4	Buena Vista, Des Moines, Polk
Brucellosis	22	27	11	Page, Polk
Chickenpox	423	851	594	Dubuque, Johnson, Page, Polk, Scott
Meningococcal meningitis	1	1	0	Des Moines
Mumps	157	262	863	Guthrie, Linn, Scott
Poliomyelitis	1	0	3	Audubon
Infectious hepatitis	20	7	15	Page, Union
Rabies in animals	14	26	24	Sioux
Malaria	0	0	0	
Psittacosis	0	0	1	
Q fever	0	0	1	
Tuberculosis	26	29	68	For the state
Syphilis	99	137	128	For the state
Gonorrhea	76	101	108	For the state
Histoplasmosis	0	0	1	
Food intoxication	0	0	0	
Meningitis (type unspecified)	0	1	1	
Diphtheria carrier	0	0	8	
Aseptic meningitis	0	1	0	
Salmonellosis	3	4	9	Linn, Johnson, Pottawat- tanie
Tetanus	1	0	0	Louisa
Chancroid	0	0	0	
Encephalitis (type unspecified)	1	1	1	Woodbury
H. influenzal meningitis	0	0	0	
Amebiasis	0	1	16	
Shigellosis	0	1	2	
Influenza	13	29	20	Polk

STAPHYLOCOCCUS PHAGE TYPING IN IOWA, 1959

To help meet the increasing problem of controlling resistant strains of staphylococci, particularly in hospitals and in the communities that surround them, the State Hygienic Laboratories of the State Department of Health have arranged to do staphylococcus phage typing. Staphylococcal cultures for phage typing will be accepted at the State Hygienic Laboratories, in Iowa City, subject to the following conditions.

1. Single cultures will not be accepted. Cultures must be from associated cases that are creating a local problem. This requirement is necessary because the primary purpose of bacteriophage typing is to establish identities or similarities between cultures from different persons or groups. In other words, if it can be determined by this means that two different cultures are actually cultures of the same strain of staphylococcus, then it is certain that they have a common origin.

2. The condition must have been reported to the State Department of Health; an epidemiologic investigation must have been made by members of that Department; and a request must have been submitted by the Department asking the Laboratories to type specimens from the associated problem cases.

3. Staphylococcus specimens accepted for typing in the State Hygienic Laboratories must meet the following requirements:

a. The culture must be pure.

b. The culture must be coagulase positive.

Diagnostic plasma for this test may be obtained from laboratory supply houses.

c. The staphylococcus organism must have been tested for antibiotic sensitivity, using a medium concentration of the broad-spectrum antibiotics.

From small hospitals that do not have laboratory facilities to satisfy the above requirements (a, b and c), cultures may be sent directly to the State Hygienic Laboratories. In these instances, the cultures must be taken directly from the nose, throat or lesion on a swab. These swabs should then be placed in sterile tubes and mailed to the Laboratories. Use cotton plugs, and do not

break off the portion of the swab stick that extends out beyond the mouth of the tube.

Physicians submitting staphylococcus cultures to the State Hygienic Laboratories for phage typing may expect to obtain results more quickly than they did last year, for the phage typing is now being done at the State Laboratories.

STAPHYLOCOCCAL FOOD INTOXICATION

A short time ago, 68 youngsters in a school with 133 pupils suddenly became ill after eating noon-day lunch at the school. The illness varied in onset from 3 to 11 hours after the food was ingested, with the average time of onset being 4½ hours after ingestion.

Illness began with nausea and vomiting. Abdominal cramps and diarrhea soon developed. Retching occurred in several patients after six or eight bouts of vomiting. Some of those most severely stricken became weakened and exhausted. Many complained of dizziness. None lost consciousness. About 30 patients were admitted to one of the local hospitals for a short period of care and observation. Some of the sicker ones required intravenous fluids and sedatives. By noon of the following day, all had recovered and were discharged from medical care.

The cause of the illness was a pre-formed toxin produced by the staphylococcus organism. In this instance, the organism had been inoculated from

the throat of one of the lunchroom food handlers into the deviled mixture being prepared to stuff the centers of the deviled eggs. After preparation, the deviled eggs were allowed to stand from two to three hours at room temperature in a warm room. This proved to be an adequate time for the growth of the organism and the consequent formation of the toxin in the food.

Though deviled eggs were the cause of this outbreak of illness, many other foods can be associated with such incidents, provided that they constitute good nutrient media and are allowed to remain at room temperature for a few hours. Such foods are usually those that require much handling as they are being prepared (potato salad or deviled eggs), or are cooked for only a short time at low temperatures (fillings for eclairs, cream pies and cream puffs). The organisms are usually introduced into these foods through some food handler who has a staphylococcal infection. The infection may be in the form of a recently cut finger carrying the organisms, pimples on the face or neck, or a staphylococcal infection of the nose or throat.

The flow sheet of laboratory findings is reproduced herewith to show the laboratory's part in the investigation of food intoxication. It will be noted that the laboratory work consisted of three types of studies. The first was the isolation and identification of a staphylococcal organism that was hemolytic and coagulase positive. The sec-

ANTIBIOGRAM

Culture Number	Source	Result	Eryth.	Pen.	Tetra.	Terra.	Neo.	Poly B.	Fura.	Bacteriophage Type
7982	Food handler No. 1 (nose)	Hemo. Staph. Coag. +	S	S	S	S	S	R	S	6, 53, 54, 77 (Conc.)
7983	Food handler No. 2 (nose)	Hemo. Staph. Coag. +	S	S	S	S	S	R	S	Non-typable (Conc.)
7984	Food handler No. 3 (throat or nose)	Hemo. Staph. Coag. +	S	S	S	S	S	R	S	79, 52A, 3B (Conc.)
7985	Food handler No. 4	No significant growth								
7986	Food handler No. 5 (nose)	No significant growth								
7987	Food handler No. 6 (throat or nose)	No significant growth								
7988-1	Peanut butter	No significant growth								
7988-2	Peanut butter	No significant growth								
7988-3	Peanut butter	No significant growth								
7989	Powdered eggs	No significant growth								
7990	Butter	No significant growth								
7991	Mayonnaise	No significant growth								
7992	Flour	No significant growth								
7993-1	Deviled egg	Hemo. Staph. Coag. +	S	S	S	S	S	R	S	6, 53, 54, 77 (Conc.)
7993-2	Deviled egg	Hemo. Staph. Coag. +	S	R	S	S	S	R	S	6, 53, 54, 77 (Conc.)
7993-3	Deviled egg	Hemo. Staph. Coag. +	S	S	S	S	S	R	S	53, 77 (Conc.)
7993-4	Deviled egg	Hemo. Staph. Coag. +	S	S	S	S	S	R	S	6, 53, 54, 77 (Conc.)
7993-5	Deviled egg	Hemo. Staph. Coag. +	S	S	S	S	S	R	S	6, 53, 77 (Conc.)
7993-6	Deviled egg	Hemo. Staph. Coag. +	S	S	S	S	S	R	S	6, 53, 54, 77 (Conc.)
7993-7	Deviled egg	Hemo. Staph. Coag. +	S	S	S	S	S	R	S	6, 53, 54, 77 (Conc.)
7993-8	Deviled egg	Hemo. Staph. Coag. +	S	S	S	S	S	R	S	6, 53, 54, 77 (Conc.)

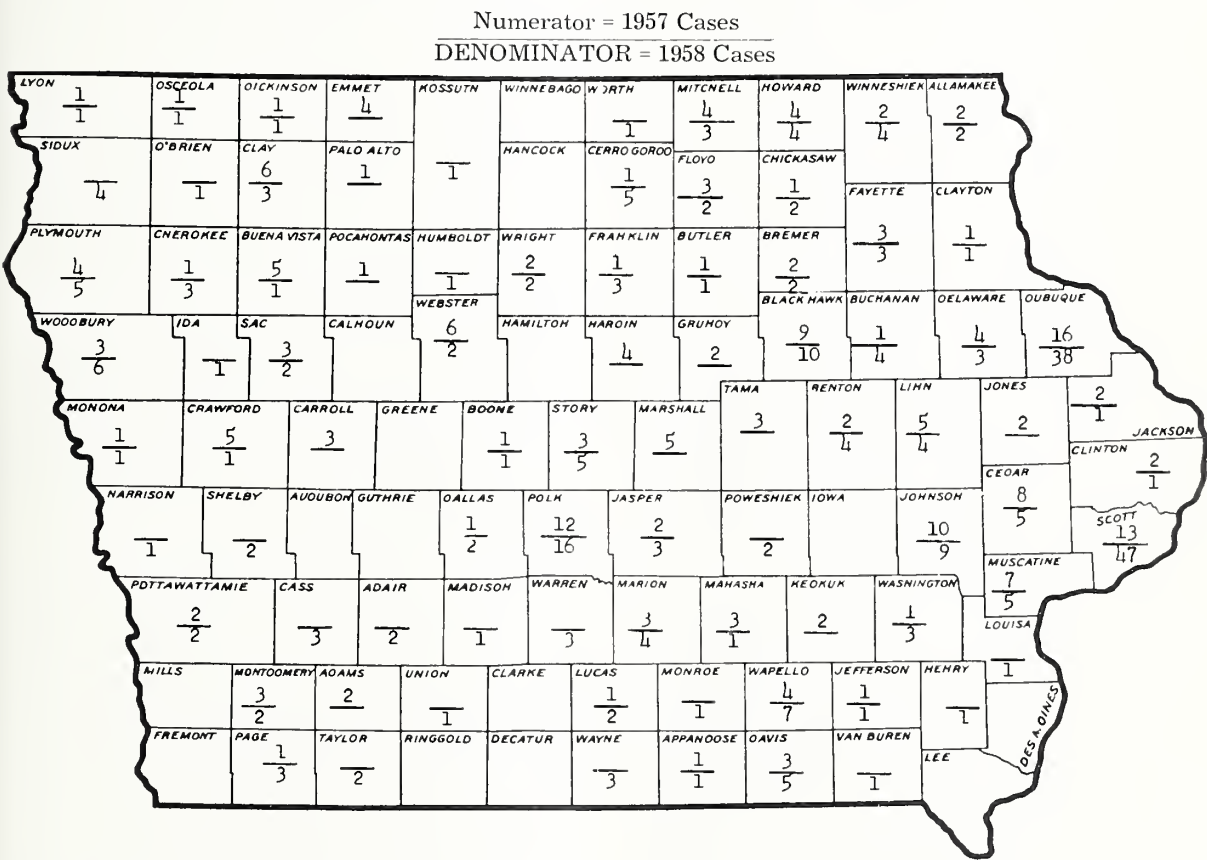
ond part was the running of a large series of antibiotics in culture with the staphylococcus to determine to which of them the staphylococcus was sensitive or resistant. The third part was ascertaining which types of bacteriophage could lyse (destroy) the staphylococcus. From the tabulation it will be noticed that of all the foods examined, only the deviled eggs contained hemolytic staphylococci which were coagulase positive. All of these, with the one exception, followed an identical antibiogram and bacteriophage type pattern. If one compares all the laboratory findings of the staphylococcus from the deviled eggs with the staphylococcus cultures isolated from the six food handlers, he finds it obvious that only the culture from food handler No. 1 is identical. In other words, food handler No. 1, who actually did work with deviling the eggs, was the person

responsible for the hemolytic staphylococcus infection in the eggs.
REMEMBER: Keep hot foods HOT, and cold foods COLD!

KENNY POSTDOCTORAL SCHOLARSHIPS

The Sister Elizabeth Kenny Foundation announces continuation of its program of post-doctoral scholarships to promote work in the field of neuromuscular diseases. These scholarships are designed for scientists at or near the end of their fellowship training in either basic or clinical fields concerned with the broad problems of the neuromuscular diseases.
Kenny Foundation scholars will be appointed annually. Each grant will provide a stipend for a five-year period at the rate of \$5,000 to \$7,000 annually, depending upon the scholar's qualifications.

HUMAN BRUCELLOSIS IN IOWA—CASES BY COUNTY



In 1958 Iowa physicians reported 283 cases of brucellosis. This number is larger than the 214 cases reported in 1957 but smaller than the 360 cases recorded in 1956. Since most human cases are the result of direct or indirect contact with infected animals, more cases are found among farmers, packing house workers and veterinarians

than in any other groups. Animal disease control officials are making progress in eradicating the disease among cattle. More effort needs to be given to eliminating the disease in hogs, since a large proportion of the human cases of brucellosis in Iowa are due to the swine type.



Woman's Auxiliary News



OUR PRESIDENT SAYS—

My "presidential journey" has included two very interesting meetings this month. Mrs. Merillat, Mrs. Lammey and I spent a day with the Iowa Nursing Careers Committee planning the recruitment objectives for the year. The information from the workshop held in Des Moines last spring gave us some practical ideas of the needs, as expressed by the various individuals, heads of organizations and leaders in the various fields of nursing.

Many have felt a need to channel girls to their second or third choices of nursing schools, in case they couldn't gain entry to their first choices. The confusion that results from girls' applying and gaining acceptance at more than one school has often left hospitals with fewer than the maximum possible numbers of freshman students. Indeed, a survey has shown that approximately 100 more students could be admitted in Iowa each year if this problem were resolved. A committee was appointed to look for answers to it.

A booth for the Iowa Nursing Careers Committee at the annual meeting of the Iowa Education Association was planned. It will be staffed by professionals in the three fields of nursing. This project has been undertaken in answer to a need that has been expressed by high school superintendents and councilors to learn more about the preparation that prospective student nurses should receive at their institutions.

The ISMS Senior Day, at Iowa City, is now a pleasant memory. Although I had felt that senior medical students and their wives or fiancées might constitute a critical audience—one that might feel it had been saturated with advice—I found it quite the opposite. The young men and women were very receptive. I enjoyed the talks given by the members of the Iowa State Medical Society. The fountain of their advice flowed freely, and beneath their practical suggestions there was a constant plea for community responsibility and service. Many of us felt that Dr. L. E. Frink could earn his living as a TV comedian, if he chose, for his "Tips on Starting a Practice" contained one laugh after another, as well as plenty of sound counsel.

Those of you who haven't had an opportunity to meet the current medical school seniors might be highly surprised to learn that 75 per cent of the

young men are married. Many of their wives will no doubt prove highly valuable members of our Auxiliary within the next few years.

MRS. E. A. LARSEN

1959 ANNUAL MEETING

The Thirtieth Annual Meeting of the Woman's Auxiliary to the Iowa State Medical Society was held at the Hotel Savery, in Des Moines, on April 20 and 21, 1959. The annual meeting is the climax of the Auxiliary's year, and the time when we review the accomplishments of our organization.

At the pre-convention board meeting on April 19, the president, Mrs. H. C. Merillat, presided, and the county Auxiliary presidents and committee chairman in attendance gave reports of their groups' activities for the year. The president made several recommendations and suggestions that she felt were pertinent to the business of our fast-growing organization.

The president opened the annual conference of delegates on Monday morning at 9:30. The general business session included the reading and acceptance of the proposed budget, the reading and acceptance of a minor change in the Constitution and By-Laws, the election of a nominating committee for 1960, and the first reading of the 1959 committee's nominees for officers to serve during the coming year.

The principal speaker at our Monday morning session was Dr. Mark Emmons, a member of the Mental Health Committee of the State Medical Society. The Auxiliary has been asked to consider undertaking the project of helping to rehabilitate psychiatric patients who live in county homes, and Dr. Emmons, a practicing psychiatrist, spoke on that subject. The morning session closed after a memorial service for deceased members conducted by Mrs. D. W. Todd.

Mrs. Karl Ritter, the National Auxiliary's chairman for AMEF, was our gracious and charming guest on Monday. She addressed the luncheon meeting on "Medicine's Best Ally—the Auxiliary," giving special emphasis to the Auxiliary's work for AMEF. Following the formal program, an enjoyable review of spring fashions was shown. As is customary, the Monday luncheon honored the State Auxiliary's past presidents.

The Tuesday morning conference of delegates was opened by the president at 9:30. Delegates to the National Convention were chosen, nominations for 1959 officers were read a second time, and the election was held. Mrs. Charles Flynn installed the new officers. A panel discussion entitled "This Is Our Best" was moderated by Mrs. B. F. Kilgore. Various activities of our organization were discussed, and those who participated were Mrs. W. H. Acker, for Nurse Recruitment; Mrs. N. W. Irving, for Educational Loan Fund; Mrs. J. T. Bakody, for Handicapped Craft Sales; and Mrs. E. E. Munger, for activities of a small Auxiliary. The morning session was concluded by an informative talk by Dr. Noble Irving, a member of the ISMS Legislative Committee. He gave us a report on important legislation pertinent to health and to the practice of medicine. We are indebted to him for the time he gave us so that Auxiliary members might be well informed.

Mrs. Dean King presided at the president's luncheon on Tuesday. At that time the Community Service Award was presented to Mrs. A. M. Davis, of Sioux City. This award is given each year to a lay person for outstanding volunteer work in the health field. Dr. Walter D. Abbott, president of the Iowa State Medical Society, awarded prizes to the three state winners in the essay contest. Mrs. E. A. Larsen, the newly installed president of the State Auxiliary, gave her inaugural address, the full text of which appeared in the June issue of the WOMAN'S AUXILIARY NEWS. Dr. L. A. Coffin, who since then has passed away, was an honored guest of the Auxiliary at the luncheon, and made some brief remarks about his experiences since being chosen AMA General Practitioner of the Year. The business of the day was concluded with the presentation of the past-president's pin to Mrs. Merillat by Mrs. Howard Smith, of Woodward.

Thereafter, Auxiliary members modeled "Hats Out of This World." Hats depicting various phases of Auxiliary activities had been made by county groups or by individual members, and much ingenuity and talent was displayed. Following this bit of fun, a fashion show of beautiful hats was presented.

As has become its custom, the Auxiliary sponsored a benefit dance in the Grand Ballroom of Hotel Savery on Tuesday evening, April 21. The proceeds were given to the Auxiliary's Health Education Loan Fund, one of the organization's most important projects. The Standard Medical and Surgical Company, of Des Moines, deserves much credit for the success of the party, for it generously provided refreshments during the evening. This party provided a wonderful opportunity for doctors and their wives to meet old friends and make many new ones, and the event, as it is repeated each year, is anticipated with pleasure.

SAFETY IS EVERYBODY'S BUSINESS

From the moment we are born, someone is interested in our safety and health. At our birth, the doctor protects our eyes, and as we go through life, precautions are constantly taken for our protection and we are admonished almost daily to watch out for our own welfare. In adulthood, we acquire the responsibility of looking after our children as well as ourselves. Hence, we can say, "Safety is everybody's business." This is the slogan that the State Auxiliary has selected for this year, and as your Safety chairman I am asking each of you to make safety your business this year and to promote it in all your activities. Live with safety, and you will be safe to live with.

Since our safety goals remain unchanged from year to year, there is no need for me to tell you what our ultimate goals are. Consequently, I can use this space to list the steps we can most profitably take toward achieving them.

In outlining the AMA Auxiliary's safety program for 1959-1960, our national president, Mrs. Gastineau, has called for special emphasis on (1) driver training courses for every high school student before he receives his license to drive, and (2) legislation that will require chemical tests for intoxication and make those tests acceptable in the courts. In the December 15 issue of AMA NEWS, a campaign to popularize the use of automobile seat belts was announced. Three groups are sponsoring that drive—the AMA, the United States Public Health Service and the National Safety Council. The campaign is aimed at reducing the numbers of deaths and injuries on the highways by reiterating the theme "It's Smart to Use Seat Belts!" State units are urged to coordinate this work and to encourage local units to participate.

There are many ways in which we can make our homes into safety zones. The AMA suggests that we promote education for poison control. Every year, about 1,000 Americans—mostly children—die from accidentally swallowing poisonous substances right in their own homes. Common household cleaning compounds, and poorly-labelled and easily-accessible medicines and cosmetics are usually the killers. In our own communities, we can help to educate the public about the dangers of poisons, and in some places we can assist the medical societies in setting up poison-control information centers. Safety concerns all of us. Let's work with all of the other people in our communities to help correct the situations that can be remedied.

I hope each county will help promote and/or organize a baby-sitter training course for young girls who are interested in doing that kind of work. The course is sponsored by the Woman's Auxiliary to the AMA and the National Safety Council. If your city or county has not started such a program, you can do your community a real

and lasting service by organizing and sponsoring one.

Safety should not be taken in moderation; it should be taken full-strength. Give safety priority listing in your vacation plans!

ESTHER F. FLYNN

Chairman, Safety Committee

GOVERNOR'S CONFERENCE ON CHILDREN AND YOUTH

The annual Governor's Conference on Children and Youth will be held in the State House, at Des Moines, on September 25, 1959. It is open to anyone interested in furthering the general well-being of the youth of Iowa, and young people under 21 years of age are especially invited.

The Conference will discuss findings of the seven committees of the Iowa Commission on Children and Youth which have been prepared for presentation at the Golden Anniversary White House Conference on Children and Youth, in Washington, D. C., in March, 1960.

It is hoped that many organizations will send representatives to help formulate recommendations based upon the committee findings. Inquiries about the Conference should be addressed to Miss Esther Immer, executive secretary, Iowa Commission on Children and Youth, State Office Building, Des Moines 19.

TRAFFIC INJURIES INCREASING

Traffic accidents on U. S. highways during 1958 caused more than 2,825,000 injuries, although deaths decreased five per cent, according to statistics compiled by the Travelers Insurance Companies.

The record number of injuries represented a 12 per cent increase during the year over the 1957 totals—more than twice the percentage increase of a year ago.

Highway deaths for the year totaled 36,700. Travelers estimated that for every highway fatality there were 77 injuries, and that more than 60,000,000 Americans have been killed or injured by automobiles since the advent of that means of transportation.

During the past year, drivers under 25 years of age were involved in 27.1 per cent of all fatal accidents and in more than 20 per cent of all non-fatal crashes, the report pointed out. This unenviable record was compiled by a group which constitutes only 14 per cent of all licensed drivers.

Passenger cars were involved in almost 80 per

cent of the non-fatal accidents, and although total mileage traveled by commercial vehicles is almost that of passenger cars, private cars became involved in four-fifths of the fatal crashes and seven-eighths of the non-fatal accidents.

OBESITY IS MAN'S PROBLEM RATHER THAN WOMAN'S

Contrary to popular belief, men in the white population are twice as likely as are women to become overweight, according to a recent issue of PATTERNS OF DISEASE, the monthly statistical summary published for doctors by Parke, Davis & Company. Only among non-whites, is obesity—a condition defined as weight at least 20 per cent above normal—more prevalent among women.

In the United States, PATTERNS states, "one adult in five weighs more than he should, and seven per cent of adults are obese.

Turning to the subject of dieting, PATTERNS says that as many as 80 per cent of the obese people who embark on a weight-reduction program abandon it for one reason or another, and among the obstacles they encounter are a complex of emotional reactions termed "dieting depression." This difficulty hampers the progress of up to 54 per cent of those on weight-reduction regimens. In a group of 100 dieting obese patients in a nutrition clinic, weakness and nervousness were the most common unpleasant responses, each being reported by about 21 per cent of the patients. Other symptoms included irritability, fatigue and nausea.

Among persons between 45 and 50 years of age, 10 lbs. of excess weight increases the chances of death by 8 per cent over normal. Similarly, 30 excess pounds mean a 28 per cent increase in chance of death, and 50 excess pounds, a 56 per cent increase. Nearly half of all obese persons develop the condition before they reach 50 years of age.

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WOMAN'S AUXILIARY TO THE IOWA STATE MEDICAL SOCIETY

President—Mrs. E. A. Larsen, 323 Oak Street, Centerville
President-Elect—Mrs. R. F. Nielsen, 919 Washington Street, Cedar Falls

Secretary—Mrs. L. F. Henderson, 304 Seerley Street, Cedar Falls

Treasurer—Mrs. J. H. Matheson, 4321 California Drive, Des Moines 12

Editor of THE NEWS—Mrs. H. C. Merillat, 116 Lincoln Place Drive, Des Moines 12

Asst. Editor of THE NEWS—Mrs. D. F. Crowley, Jr., 663 44th Street, Des Moines 12

MINUTES OF THE 1959 SESSIONS OF THE HOUSE OF DELEGATES

Iowa State Medical Society Des Moines, Iowa—April 19-22, 1959

(Alphabetical Index to the Minutes Can Be Found on Page 481)

SUNDAY SESSION APRIL 19, 1959

The House of Delegates of the Iowa State Medical Society was called to order by the Speaker, Dr. C. V. Edwards, Sr., of Council Bluffs, at 10:00 a.m., Sunday, April 19. The House of Delegates approved the taking of attendance by signed registration cards. There were 113 delegates, 5 voting alternates, and 17 ex-officio members present.

<i>County</i>	<i>Delegate</i>	<i>Alternate</i>
Adair	A. J. Gantz	
Adams	A. W. Brunk	
Allamakee	M. F. Kiesau	
Appanoose	E. A. Larsen	
Audubon	L. E. Jensen	
Black Hawk	C. D. Ellyson	
	T. L. Trunnell	
	R. C. Miller	
	F. G. Loomis	
Boone	R. L. Wicks	
Bremer	R. E. Shaw	
Buchanan	R. L. Knipfer	
Buena Vista	H. E. Farnsworth	
Butler	F. A. Rolfs	
Calhoun	C. R. Wilson	
Carroll	R. J. Ferlic	
Cerro Gordo	J. K. MacGregor	
	L. W. Swanson	
	G. J. Sartor	
Cherokee	D. C. Koser	
Chickasaw	P. C. Richmond	
Clarke	H. E. Stroy	
Clay	D. H. King	
Clinton	R. O. Emmons	
	V. W. Petersen	
Crawford	J. M. Hennessey	
Dallas-Guthrie	W. A. Castles	
	R. J. Peterson	
Davis	W. D. Haufe	
Delaware	J. E. Tyrrell	
Des Moines	E. P. Russell	
	F. G. Ober	
Dickinson	D. F. Rodawig, Sr.	
Dubuque	R. J. McNamara	
	D. F. Ward	
Emmet	R. L. Cox	
Fayette	A. F. Grandinetti	
Floyd	R. A. Fox	
Franklin	W. W. Taylor	
Fremont	W. H. Kerr	
Hamilton	G. A. Paschal	
Hancock-Winnebag	J. T. Mangan	
Hardin	J. J. Shurts	
Howard	D. O. Maland	
Humboldt	J. H. Coddington	
Jasper		
Jefferson	K. H. Strong	
Johnson	K. R. Cross	
	J. M. Layton	
	S. C. Ware	
	A. C. Wise	
Jones	E. H. DeShaw	
Lee	L. C. Pumphrey	
Linn	J. J. Keith	
	John Parke	
	J. J. Redmond	
	L. J. Halpin	
Lucas	C. H. Stark	
Lyon	R. C. Gutch	
Madison	G. D. Bullock	
	G. J. Anderson	

<i>County</i>	<i>Delegate</i>	<i>Alternate</i>
Mahaska	G. W. Bennett	
Marion	Peter Van Zante	
Marshall	O. D. Wolfe	
Mills	M. L. Scheffel	
Montgomery	Oscar Alden	
Muscatine	K. E. Wilcox	
Page	J. R. Eisenach	
Palo Alto	G. H. Keeney	
Plymouth	J. P. Trotzig	
Pocahontas	J. M. Rhodes	
Polk	J. T. McMillan	
	R. B. Stickler	
	M. E. Alberts	
	T. A. Bond	
	D. F. Crowley, Jr.	
	N. W. Irving, Jr.	
	J. T. Bakody	C. C. Woodburn, Jr. H. E. Wichern
	A. B. Phillips	
	B. C. Barnes	
	J. G. Thomsen	
	F. M. Burgeson	
Pottawattamie	H. W. Mathiasen	
	F. N. Weber	
	G. H. Pester	
	J. R. Parish	
Poweshiek	D. E. Mitchell	
Ringgold	J. W. Gauger	
Sac	W. S. Pheteplace	
Scott	J. H. Sunderbruch	
	J. F. Bishop	
	P. E. Gibson	
Shelby	J. H. Spearing	
Sioux	M. O. Larson	
Story	G. E. McFarland, Jr.	
	G. E. Montgomery	
Tama	C. W. Mapletorpe, Sr.	
Taylor	R. W. Boulden	
Union	H. J. Peggs	
Van Buren	L. A. Coffin	
Wapello	K. E. Lister	
	P. D. McIntosh	
Warren	C. A. Trueblood	
Washington	D. G. Sattler	
Wayne	C. N. Hyatt	
Webster	C. J. Baker	
	H. H. Kersten	
Winneshiek	E. F. Hagen	
Woodbury	P. D. Knott	
	P. L. Bettler	
	P. M. Cmeyla	
Worth	B. H. Osten	
Wright	C. P. Hawkins	

DELEGATE AT LARGE

J. W. Billingsley

R. F. Frech

Michael Bonfiglio
M. L. Mosher

OFFICERS PRESENT AS EX-OFFICIO MEMBERS OF THE HOUSE

W. D. Abbott	M. A. Blackstone
R. F. Birge	C. W. Seibert
N. B. Anderson	C. E. Radcliffe
C. V. Edwards	G. S. Atkinson
G. H. Scanlon	L. V. Larsen
C. H. Flynn	R. N. Larimer
S. P. Leinbach	F. C. Coleman
R. M. Dahlquist	H. W. Morgan
J. E. Houlahan	

Minutes of the February 22, 1959, special meeting of the House of Delegates were approved as published in the April, 1959, JOURNAL OF THE IOWA STATE MEDICAL

SOCIETY. The Speaker outlined procedures to be followed in conducting the business of the House of Delegates and announced the appointment of reference committees, stating that the reference committees would be expected to begin their hearings as soon as convenient following adjournment of the House of Delegates on Sunday, April 19.

The Speaker announced the names of the physicians who had been chosen by their respective districts to serve on the Nominating Committee. They were as follows:

R. A. Fox, M.D.	C. H. Stark, M.D.
J. K. MacGregor, M.D.	L. C. Pumphrey, M.D.
Dean H. King, M.D.	E. A. Larsen, M.D.
H. E. Farnsworth, M.D.	A. J. Gantz, M.D.
G. E. McFarland, Jr., M.D.	M. L. Scheffel, M.D.
C. D. Ellyson, M.D.	

Reports as published in the 1959 HANDBOOK FOR THE HOUSE OF DELEGATES were approved, except for the reports of the Fee Committee and the Committee on Public Health, which contained recommendations and were consequently referred, respectively, to the Board of Trustees sitting as a reference committee, and to the Reference Committee on Miscellaneous Business.

Reports of Officers

FROM THE OFFICE OF THE SECRETARY

1959 Annual Meeting. Plans for this year's Annual Meeting were begun immediately upon the adjournment of the 1958 meeting. On the basis of sentiment expressed by the House of Delegates, the Program Committee changed the format of the convention in an effort to streamline the meetings and eliminate splintering the annual sessions into many segments. This year, only general scientific sessions will be held. No section meetings are scheduled. Specialty groups will hold their gatherings on Monday evening, and that time has been left open for this purpose. The banquet will be on Tuesday evening, and it will be followed immediately by the Woman's Auxiliary Benefit Dance. The House of Delegates will meet at 10:00 a.m. on Sunday, April 19. Delegates will be provided a list of churches in Des Moines that hold early morning services.

House of Delegates. The minutes of the 1958 sessions of the House of Delegates were published in the July, 1958, issue of the JOURNAL OF THE IOWA STATE MEDICAL SOCIETY. Every effort has been made to follow through on all directives of the House of Delegates. The secretary's office has assisted the president in announcing his committee appointments and in organizing and activating the Society's committees.

Special Session of the House of Delegates. On February 22, 1959, a special meeting of the House of Delegates was held in Des Moines to consider crucial problems that required early attention. The subjects considered at the special session were: Legislation, Vendor Payment Program, Third Parties in Medicine, and Blue Shield Proposals. The Society's office had 30 days to prepare for this meeting, and the staff responded to this emergency.

Executive Council. The Executive Council, the policy-making body of the Society between sessions of the House of Delegates, has held four meetings since last April. It has concerned itself with annual-meeting planning, legislation, Blue Shield, Medicare,

group life and disability insurance programs, the vendor payment program, policy statements concerning acceptance of fees by residents and licensure of paramedical groups.

Judicial Council. The Judicial Council, the State Society's judicial authority, has held six meetings since the 1958 Annual Meeting. One of its major responsibilities has been the approval of applicants for ISMS membership. The Judicial Council is proposing changes in the Articles of Incorporation and By-Laws to clarify the membership status of life and associate members. It has assumed responsibility for organizing utilization and fee committees. To date, the organization of these committees has been partially or fully completed in ten districts. The Judicial Council is studying the desirability of reorganizing the councilor districts of the ISMS.

Committees. The Society has 43 standing and special committees, most of which have met at least once during the year. Reports covering the activities of these groups appear elsewhere in this HANDBOOK, or will be presented as oral reports to the House of Delegates. To date, approximately 46 official committee meetings have been held, and prior to the Annual Meeting, numerous additional meetings will be scheduled. These totals do not include informal meetings of committee members, or the conferences that have taken place by telephone.

Regional Meetings. The Iowa State Medical Society, in cooperation with Iowa Medical Service (Blue Shield) has held 25 district meetings. They were attended by 641 physicians and 238 doctors' wives. Auxiliary members were not included in all of the meetings. These regional meetings were authorized by the House of Delegates last April, and were held in lieu of the fall conference of county medical society officers.

Liaison With County Medical Societies. Officers and other members of the Society, as well as staff personnel, have met with a number of county medical societies during the past year. The programs for these meetings covered various projects of the Society.

Field Service. Most of the field work this past year involved arranging and conducting the regional meetings, although many contacts were made with individual physicians, and the officers of practically every county in the state were consulted at least once on a personal basis.

General Mailings. The mailings issued during the year have consisted of seven news bulletins, three legislative bulletins, 12 legislative contact man mailings, one Public Relations Committee mailing and four deputy councilor newsletters. We rely on the JOURNAL OF THE IOWA STATE MEDICAL SOCIETY to transmit general information to the membership.

National Conferences. The national conferences attended by one or more representatives of the ISMS have included meetings of the AMA, of the AMA Public Relations Advisory Committee, the National Rural Health Conference, the National Meeting on Civil Defense, the Congress on Industrial Health, the American Medical Education Foundation, the National Blue Shield Conference on Professional Relations, a Medico-Legal Conference, the Conference on Chemicals, the National Health Insurance Council, the Medical Society Executives Association, the National Meeting of Medical Assistants, and a conference with Iowa senators and congressmen in Washington, D. C.

Regional Conferences. Meetings in this category that have been attended by a representative or representatives of the ISMS have included the Annual Meeting of the State Medical Society of Wisconsin and the North Central Medical Conference.

State Conferences. Representatives of the State Medical Society have attended Senior Day, in Iowa City, the Health Education Workshop, United Nations Day, the Governor's Mental Health Advisory Committee, an Interprofessional Conference on Disaster Planning, the Disaster Planning Committee of the Iowa Interprofessional Association, the Annual Meeting of the Iowa Nurses' Association, the Annual Meeting of the Iowa Association of Medical Assistants, the Mason City Chapter of the Iowa Medical Assistants, the Annual Meeting of the Iowa Nursing Home Association, the Annual Meeting of the Iowa Interprofessional Association, the Iowa Health Insurance Council, the Paramedical Licensure Conference, the Annual Meeting of the Iowa Pharmaceutical Association, the Annual Meeting of Hospital Service, Inc. (Blue Cross), and the Annual Meeting of the Iowa State Bar Association.

The State Society has continued its close liaison with the American Medical Association and with Blue Shield Medical Care Plans, as well as with many other national organizations. The ISMS is represented on the AMA Committee on Federal Medical Services by Dr. D. C. Conzett, of Dubuque, on the Legislative Committee of the AMA by Dr. F. C. Coleman, of Des Moines, and on a committee that is studying revisions of the Constitution and By-Laws of the AMA Scientific Assembly by Dr. D. F. Ward, of Dubuque. The Society's executive director is a member of the AMA Public Relations Advisory Committee. The national affiliations of other ISMS members are too numerous to mention.

Services to the Woman's Auxiliary. Full facilities of the ISMS have been made available to the Woman's Auxiliary to assist it in carrying out its projects. However, the bulk of this work is handled by an executive assistant who is staff secretary to the Auxiliary. The Society staff has been represented at the following Auxiliary meetings: Woman's Auxiliary board meetings, executive board meetings, practical nurses' conferences, Conference on Nursing Careers, National Conference of State Auxiliary Officers, conferences with the Auxiliary committee responsible for planning the organization's annual meeting, and numerous conferences with Auxiliary committee chairmen. The staff handles mailings of various types for the Woman's Auxiliary.

Other administrative responsibilities that the Society's staff assumes for the Woman's Auxiliary include making arrangements for the Auxiliary's annual meeting, preparing its annual reports, maintaining its membership records and roster, and preparing the issues of its WOMAN'S AUXILIARY NEWS.

ISMS MEMBERSHIPS

Memberships in the Iowa State Medical Society during the year 1958 totaled 2,438, as compared with 2,447 in 1957. There were 67 counties in which 100 per cent of the county society members held membership in the ISMS, representing an increase over 62 in 1957. In 1958 there were 60 eligible non-members as compared with 74 in 1957. The number of ineligible non-members increased from 48 in 1957 to

63 in 1958, largely as a result of the fact that in the institutions throughout the state there are more physicians who are not yet eligible for Iowa licensing. Physicians retired or not in practice decreased from 114 in 1957 to 106 in 1958. The total membership percentage in 1958 remains at 97, the same percentage as in 1957.

COUNTY SOCIETIES HAVING 100 PER CENT MEMBERSHIP IN ISMS IN 1958

Adams	Des Moines	Lee	Ringgold
Allamakee	Dickinson	Lucas	Sac
Audubon	Floyd	Lyon	Scott
Boone	Franklin	Madison	Shelby
Bremer	Greene	Mahaska	Sioux
Butler	Grundy	Marshall	Story
Calhoun	Hamilton	Monona	Tama
Cerro Gordo	Harrison	Monroe	Taylor
Cherokee	Henry	Montgomery	Union
Chickasaw	Howard	O'Brien	Van Buren
Clarke	Humboldt	Osceola	Wapello
Clay	Ida	Page	Warren
Crawford	Iowa	Plymouth	Washington
Dallas-	Jackson	Pocahontas	Wayne
Guthrie	Jasper	Polk	Webster
Davis	Jefferson	Pottawattamie	Winnesiek
Delaware	Kossuth		Worth
			Wright

1958 ISMS MEMBERSHIP RECORD

County	Members	Eligible Non-Members	Ineligible Non-Members	Not in Practice or Retired	Percentage
Adair	4	2	..	..	67
Adams	4	..	..	..	100
Allamakee	5	..	..	2	100
Appanoose	12	3	..	..	80
Audubon	5	..	..	2	100
Benton	1	2	..	..	99
Black Hawk	117	1	..	1	99
Boone	18	..	..	..	100
Bremer	17	..	..	..	100
Buchanan	12	1	13	..	92
Buena Vista	14	1	2	..	93
Butler	9	..	..	..	100
Calhoun	15	..	..	2	100
Carroll	24	1	..	1	96
Cass	10	1	1	..	91
Cedar	7	2	..	..	78
Cerro Gordo	70	..	..	..	100
Cherokee	17	..	10	1	100
Chickasaw	12	..	..	..	100
Clarke	6	..	..	..	100
Clay	13	..	..	..	100
Clayton	10	2	..	1	83
Clinton	48	2	2	..	96
Crawford	7	..	..	2	100
Dallas-Guthrie	24	..	5	..	100
Davis	13	..	..	..	100
Decatur	5	1	..	1	83
Delaware	11	..	1	1	100
Des Moines	44	..	..	..	100
Dickinson	8	..	..	..	100
Dubuque	73	2	..	2	97
Emmet	13	1	..	..	93
Fayette	22	2	..	2	92
Floyd	18	..	..	1	100
Franklin	8	..	..	..	100
Fremont	5	1	..	1	83
Greene	16	..	..	1	100
Grundy	12	..	..	..	100
Hamilton	14	..	1	..	100
Hancock-Winnebag	16	1	1	1	94
Hardin	19	1	..	..	95
Harrison	8	..	..	3	100
Henry	14	..	6	1	100
Howard	8	..	..	..	100
Humboldt	8	..	..	..	100
Ida	5	..	..	2	100
Iowa	13	..	..	..	100

County	Members	Eligible Non-Members	Ineligible Non-Members	Not in Practice or Retired	Percentage
Jackson	13	..	..	..	100
Jasper	20	..	..	..	100
Jefferson	12	..	..	..	100
Johnson	198	5	..	..	98
Jones	13	2	..	..	87
Keokuk	7	1	1	1	89
Kossuth	12	..	1	..	100
Lee	38	..	..	1	100
Linn	122	1	..	..	99
Louisa	2	3	..	..	40
Lucas	8	..	..	..	100
Lyon	6	..	..	..	100
Madison	7	..	..	..	100
Mahaska	18	..	..	..	100
Marion	16	6	..	..	73
Marshall	36	..	..	..	100
Mills	5	2	1	..	71
Mitchell	8	4	..	2	67
Monona	11	..	..	1	100
Monroe	7	..	..	..	100
Montgomery	15	..	2	..	100
Muscatine	20	1	2	1	95
O'Brien	16	..	..	..	100
Osceola	6	..	..	..	100
Page	21	..	10	..	100
Palo Alto	13	1	..	1	93
Plymouth	11	..	1	3	100
Pocahontas	8	..	1	1	100
Polk	322	..	2	19	100
Pottawattamie	70	..	1	5	100
Poweshiek	9	6	..	..	60
Ringgold	5	..	..	..	100
Sac	10	..	..	..	100
Scott	105	..	..	5	100
Shelby	8	..	..	3	100
Sioux	11	..	..	1	100
Story	46	..	..	1	100
Tama	13	..	..	2	100
Taylor	3	..	..	..	100
Union	14	..	..	..	100
Van Buren	5	..	..	..	100
Wapello	55	..	..	..	100
Warren	9	..	..	2	100
Washington	12	..	..	2	100
Wayne	6	..	..	..	100
Webster	56	..	..	3	100
Winneshiek	9	..	..	1	100
Woodbury	125	1	2	6	99
Worth	5	..	..	..	100
Wright	21	..	..	2	100
	2,438	60	63	106	97

AMA MEMBERSHIP

In 1958, the members of the Iowa State Medical Society who were active members of the American Medical Association numbered 2,355. In addition, 32 members held associate memberships, and 26 held service memberships (in Veterans Administration and Armed Forces) in the AMA. The 2,355 active AMA memberships in 1958 entitle us to three AMA delegates. Our 1958 AMA membership was 96.6 per cent of the total Iowa State Medical Society membership, an increase over the year 1957.

R. F. BIRGE, M.D., *Secretary*

REPORT OF THE TREASURER

The Society's financial statements for 1958 reflect the increasing number of activities carried on by the Iowa State Medical Society. Although receipts increased but slightly over the previous year, Society expenditures were 4 per cent higher than in 1957. However, an addition has been made to Society reserves, and its net worth has been increased.

The Society's 1958 Baldrige-Beye Memorial Fund contribution is being held in abeyance until we are assured by the American Medical Education Founda-

tion that these funds will be earmarked for the State University of Iowa College of Medicine. The 1958 contribution of \$2,124.00 is based on the assignment of \$1.00 for each dues paying member.

IOWA STATE MEDICAL SOCIETY

Balance Sheet—December 31, 1958

ASSETS	
Current Assets:	
Cash in Banks	\$ 29,752.10
Corporation—Common Stock ..	14,029.28
Government Bonds	30,500.00
Treasury Bills	27,000.00
Medicare	5,000.00
Notes Receivable—	
Baldrige-Beye Fund	3,178.00
North Central Dist. Blood	
Bank Clearing House	500.00
Pension Insurance due from	
Employees	500.04
Total Current Assets ...	\$110,459.42
Fixed Assets:	
Land	\$ 5,000.00
Building	41,139.94
Office Furniture and Fixtures .	16,309.24
Total	\$ 62,449.18
Less: Depreciation	
to Date	18,388.18
Net Fixed Assets	\$ 44,061.00
TOTAL ASSETS	\$154,520.42

LIABILITIES AND NET WORTH

Liabilities:	
Local Taxes	\$ 1,400.67
TOTAL LIABILITIES	\$ 1,400.67
Baldrige-Beye Memorial Fund:	
Balance 1-1-58	\$ 3,178.00
Add: Income 1958	2,124.00
Total	5,302.00
Net Worth:	
Balance 1-1-58	\$133,177.83
Add: Net Income 1958	14,639.92
Balance 12-31-58	\$147,817.75
TOTAL LIABILITIES AND NET	
WORTH 12-31-58	\$154,520.42

IOWA STATE MEDICAL SOCIETY
STATEMENT OF INCOME AND EXPENSES

For the Year Ended—December 31, 1958

Income for the Year 1958:	
Dues—State Society	\$157,870.75
Dues—AMA	50,710.00
ISMS Educational Fund	21,042.50
JOURNAL Advertising	43,175.91
JOURNAL Reprints	1,638.74
Annual Session	13,459.16
Medicare	6,112.06
Miscellaneous	521.09
AMA Collection Commission	504.87
Dividends—Corporation Stock	232.50
Interest—Government Bonds	1,002.20
Interest—Savings Accounts	977.07
TOTAL RECEIPTS	\$297,246.85

Expenses for the Year 1958:

Annual Session	\$ 14,129.72
Baldrige-Beye Memorial Fund	2,124.00
Committee Expense:	
Grievance	1,300.06
Health Education	538.67
Legislative	12,000.00
Medical Education and Hospital	192.13
Medical Service	1,464.15
Medico-Legal	575.32
Public Health	2,056.98
Public Relations	7,182.50
Other Committees	1,638.40
Council Expense	1,504.52
County Society Services	489.26
Depreciation—Building	1,044.00
Depreciation—Office Furniture and Fixtures	1,099.75
Dues to AMA	50,685.00
Dues and Subscriptions	1,726.30
General Administrative Expense	1,514.88
Insurance	659.55
ISMS Educational Fund	21,042.50
Janitor and Cleaning Supplies	110.21
JOURNAL—Printing and Engraving	35,636.83
JOURNAL—Reprints	1,466.67
Legal Expense	10,008.82
Light, Gas and Water	1,002.62
Office Stationery and Supplies	3,655.10
Pension Insurance	2,661.67
Postage	3,344.82
Repairs and Maintenance of Office Equip- ment and Building	268.47
Salaries	78,091.01
Service Contracts—Machines	511.63
Taxes:	
Personal and Real Estate	1,486.62
Social Security	1,203.18
Unemployment—Federal	130.51
Unemployment—State	97.87
Use Tax	718.53
Telephone and Telegraph	4,113.21
Travel—Officer	5,349.84
Travel—Salaried Employee	6,927.12
Trustee Expense	1,575.95
Woman's Auxiliary	1,278.56

TOTAL EXPENSES\$282,606.93

Net Income\$ 14,639.92

N. BOYD ANDERSON, M.D., *Treasurer*

BOARD OF TRUSTEES

The Board of Trustees is responsible for overseeing the financial and administrative affairs of the Iowa State Medical Society. Therefore, it is directly or indirectly involved in every phase of the Society's activities, and accordingly, most of the contents of this HANDBOOK constitute portions of the Board's report. Special attention should be given to the reports of the secretary and the treasurer.

At the first meeting of the House of Delegates, the Board will present a summary of its work during the past year and will present the results of its study concerning the selection of ISMS representatives to meetings of the AMA, especially in reference to the role of alternate delegates. This study was undertaken as a result of a resolution passed by the ISMS House of Delegates in 1958.

G. H. SCANLON, M.D., *Chairman*

Report of the Judicial Council

FIRST DISTRICT

The First Councilor District was selected for the first of the "grass roots" meetings on State Medical Society and Blue Shield affairs. Three tri-county meetings were held last May in Decorah, Charles City and Oelwein. The attendance at those meetings was fairly good, and the physicians present expressed much satisfaction with the material presented and the manner of its presentation. We wish to proffer our sincere thanks to the speakers for having sacrificed time from their homes and work to visit with us.

On December 1, 1958, Dr. A. F. Fritchen, of Decorah, was installed as president of the Mississippi Valley Medical Society at its annual business meeting in Minneapolis. The honor was richly deserved, for it was given to a man who has worked faithfully in the practice of medicine and who has given much of himself to further the progress of county, state and national medical associations.

Dr. P. A. Nierling, of Cresco, received an attendance award from the Interstate Postgraduate Medical Assembly at its meeting in Cleveland on November 12, 1958. The award was given him for having attended 10 meetings of Interstate since 1940.

I wish to thank all the deputy councilors of the First District for their considerable help during the past year.

RALPH M. DAHLQUIST, M.D., *Councilor*

Deputy Councilors:

R. R. JEFFRIES, M.D., Allamakee
R. E. SHAW, M.D., Bremer
M. J. McGRANE, M.D., Chickasaw
P. R. V. HOMMEL, M.D., Clayton
A. F. GRANDINETTI, M.D., Fayette
E. V. AYERS, M.D., Floyd
P. A. NIERLING, M.D., Howard
T. E. BLONG, M.D., Mitchell
E. F. HAGEN, M.D., Winneshiek

SECOND DISTRICT

All of the counties in the Second Councilor District carried out preschool examinations and a program of inoculations. For the most part, these programs were conducted in individual doctors' offices. Several of the counties contiguous to Cerro Gordo County have joined the North Iowa Mental Health Center, located at Mason City.

In March, a meeting was held in Mason City for councilors, delegates and officers of the various county medical societies in the Second District to discuss State Medical Society and other problems. The holding of annual gatherings of this type has been established as a permanent policy in the Second District.

The programs at the regular meetings of the Cerro Gordo County Medical Society were well attended by doctors from surrounding counties.

JAY E. HOULAHAN, M.D., *Councilor*

Deputy Councilors:

FRANK F. MCKEAN, M.D., Butler
H. G. MARINOS, M.D., Cerro Gordo
W. L. RANDALL, M.D., Franklin
T. J. IRISH, M.D., Hancock-Winnebagos
I. T. SCHULTZ, M.D., Humboldt
M. G. BOURNE, M.D., Kossuth
CHARLES BERGEN, M.D., Worth
S. P. LEINBACH, M.D., Wright

THIRD DISTRICT

Interest and activity in organized medicine have continued in the Third Councilor District throughout the past year. County societies have held their usual regular meetings, including scientific programs to further the postgraduate education of the members.

In July, Dickinson County was the site of a scientific meeting of the Iowa Academy of General Practice. It was held at Templar Park, on Spirit Lake, and was an excellent and well-attended one-day meeting. Another scientific gathering attended by doctors of this District was sponsored by the Upper Des Moines Valley Medical Society, and was held at the Inn, on West Okoboji Lake, Dickinson County, in August.

In September, well-attended meetings were held at Emmetsburg, in Palo Alto County, and at Sheldon, in O'Brien County, at which representatives of Blue Shield and officers of the State Society conferred with doctors of those areas.

The Woman's Auxiliaries in our various counties have lost none of their momentum. In addition to their usual projects, early in December Mrs. Lester Hegg and Mrs. Wayland Hicks, the third and fourth district councilors for that organization, sponsored a luncheon for Auxiliary members of the two districts at the Hicks home in Sioux City.

Within the next few months, Dickinson County will open a completely new and well-equipped county hospital at Spirit Lake. Dr. Ruth Walcott, secretary of the Dickinson County Medical Society, was recently appointed as a new member of the State Board of Health.

In mid-December, because of questions which had come up in county meetings concerning the Vendor Payment Program, a meeting of deputy councilors of the Third District was held, and the feeling of all those present was that the plan should be vigorously opposed. All of the doctors at that meeting expressed a desire to have other district meetings, and tentative plans are in the making for closer relationships between the counties in the Third Councilor District.

DEAN H. KING, M.D., *Councilor*

Deputy Councilors:

C. C. JONES, M.D., Clay
R. F. WALCOTT, M.D., Dickinson
E. K. VAUBEL, M.D., Emmet
STUART COOK, M.D., Lyon
E. B. GETTY, M.D., O'Brien
F. M. RIZZO, M.D., Osceola
H. L. BRERETON, M.D., Palo Alto
C. L. JONES, M.D., Pocahontas
M. O. LARSON, M.D., Sioux

FOURTH DISTRICT

The physicians of the Fourth Councilor District have been active in the work of organized medicine during the past year. Most of the nine county societies have held regular meetings, relating not only to the scientific aspects of medical progress but also to the ever more important socio-economic and public relations phases of medicine.

Three well-attended ISMS-Blue Shield meetings were held during the year in the Fourth Councilor District, to bring to the individual practitioner the problems and accomplishments of both organizations. It is felt that these district meetings should continue. Not only does the practitioner benefit from such opportunities to exchange views, but also the ISMS and Blue Shield gain considerable familiarity with the attitudes of participating physicians, which might never be voiced except for this means of communication.

The deputy councilors in this district are to be complimented for their interest and valued assistance.

M. A. BLACKSTONE, M. D., *Councilor*

Deputy Councilors:

H. D. RULIFFSON, M.D., Buena Vista
JAMES TIERNEY, M.D., Carroll
H. J. FISHMAN, M.D., Cherokee
R. A. HUBER, M.D., Crawford
J. B. DRESSLER, M.D., Ida
L. A. GAUKEL, M.D., Monona
R. L. FISCH, M.D., Plymouth
J. W. GAUGER, M.D., Sac
D. B. BLUME, M.D., Woodbury

FIFTH DISTRICT

All county societies of the Fifth Councilor District have continued to carry on their usual activities during the past year. Regular scientific sessions are held in all counties throughout the year, except during the summer months.

Three sectional meetings were held in the District during the month of February. On February 5, Webster County was host for the Calhoun, Hamilton and Humboldt County Medical Societies; on February 19, Boone County was host to the Story and Greene County Societies; and on February 25, Polk County was host to the Dallas-Guthrie and Warren County Societies. These meetings appear to be of considerable value in keeping the individual physician informed as to the activities at the state level, and if they are to be held annually, it would seem that they might obviate some of the misunderstandings that continue to crop up between members of the profession at the county level and at the state level.

One county in the district reported a specific attempt at promoting a program to improve public relations. The Calhoun County Society is working on a better program of preventive medicine and is attempting to get the county public health nurse reinstated. In addition, the Calhoun County doctors are planning to foster a merit award for high school seniors. This appears to be an area in which all county societies could make a contribution.

The Polk County Society reported that it had taken definitive action as regards legislation on both the local and the national level. It participated in the selection of a coroner candidate on each ticket. It subsidized its Auxiliary in its contacts with the Legislature, in nurse recruitment, in health education in the schools, and in sponsorship of an essay contest. Other activities of the Polk County Society included: participation in a study of abeyant tuberculosis, under the supervision of the director of public health for Polk

County and Des Moines; participation in Iowa's First Industrial Health Conference; a joint meeting with the Polk County Bar Association; and a preschool health program, with a high percentage of physicians participating, which resulted in the examination of 42 per cent of all children in the county who were about to enter kindergarten.

I wish to thank the deputy councilors of this District for their cooperation and assistance during the past year.

G. E. McFARLAND, JR., M.D., *Councilor*

Deputy Councilors:

RALPH L. WICKS, M.D., Boone
GLENN S. ROST, M.D., Calhoun
ALLAN G. FELTER, M.D., Dallas
ELVIN D. THOMPSON, M.D., Greene
WILLIAM A. SEIDLER, JR., M.D., Guthrie
WILLIAM B. MCGAHEY, M.D., Hamilton
JOHN G. THOMSEN, M.D., Polk
JOHN D. CONNER, M.D., Story
CHARLES J. BAKER, M.D., Webster

SIXTH DISTRICT

All counties in the Sixth Councilor District are now fully organized and have full slates of officers. Regular meetings are held in all of the counties, including scientific programs most of the time.

Publicity strongly urging polio immunization has been carried out in all of the counties. Physicians in the Sixth District who are not members of the State Society have been urged, individually, to apply for membership. Fee and Utilization Committees have been set up, though as yet it has not been necessary for them to function.

There has been considerable hospital building in Black Hawk County. Allen Memorial Hospital has just completed a 75-bed convalescent home in connection with the hospital, and in addition, contracts are being let for a new psychiatric wing to house approximately 38 patients and to contain full facilities for electroshock therapy, and both open and locked wards. Schoitz Memorial Hospital, in Waterloo, is constructing an 80-bed addition, one major operating room and a recovery room. In addition, plans have been made for the installation of a cobalt unit, sometime in the future. Sartori Memorial Hospital, in Cedar Falls, is adding a new laundry and heating unit which have been badly needed for some time.

C. W. SEIBERT, M.D., *Councilor*

Deputy Councilors:

N. C. KNOSP, M.D., Benton
C. D. ELLYSON, M.D., Black Hawk
A. E. REEDHOLM, M.D., Grundy
L. F. PARKER, M.D., Hardin
C. F. WATTS, M.D., Iowa
J. W. FERGUSON, M.D., Jasper
R. C. CARPENTER, M.D., Marshall
S. D. PORTER, M.D., Poweshiek
A. J. HAVLIK, M.D., Tama

SEVENTH DISTRICT

I should first like to extend heartfelt thanks to the deputy councilors in the counties of Buchanan, Cedar,

Clinton, Delaware, Dubuque, Jackson, Johnson, Jones and Linn. These busy physicians have done a great deal of work in the past year to further the aims and objectives of their respective county societies as well as of the Iowa State Medical Society.

The constituent county societies in the Seventh District have had monthly or bi-monthly scientific meetings, at which speakers from all over the country have presented papers of clinical merit.

Many community health activities have been supported or actually carried out by member physicians. These have included the work of the Red Cross bloodmobile, Diabetic Week, hospital expansions, heart and cancer forums, school inoculation programs, Boys' Club physical examinations and well-baby clinics.

The preceptor program of the State Medical Society has also been well supported.

During the month of November, four meetings were held in this District, in the cities of Dubuque, Clinton, Cedar Rapids and Iowa City. The topics for discussion were the organization of the Iowa State Medical Society, Blue Shield objectives and operation, and the Vendor Payment Program of the State Welfare Department. These meetings were well attended, and they stimulated some very lively discussion, particularly of vendor payment. Many questions were raised, and the implications of the program were looked upon with mixed emotions.

C. E. RADCLIFFE, M.D., *Councilor*

Deputy Councilors:

P. J. LEEHEY, M.D., Buchanan
H. E. O'NEAL, M.D., Cedar
V. W. PETERSEN, M.D., Clinton
R. E. CLARK, M.D., Delaware
D. F. WARD, M.D., Dubuque
O. L. FRANK, M.D., Jackson
L. H. JACQUES, M.D., Johnson
T. M. REDMOND, M.D., Jones
H. J. JONES, M.D., Linn

EIGHTH DISTRICT

The highlight of the year, for physicians of the Eighth Councilor District, was the choosing of one of their number both by the State Medical Society and the AMA as General Practitioner of the Year. There was no finer choice to be made in either organization. Dr. Coffin was given full recognition by his town and its inhabitants after those honors were bestowed upon him.

All county societies in the Eighth Councilor District held their regularly scheduled meetings throughout the year, and for the most part they were well attended. There was one regional meeting, held in Burlington. Doctors and their wives from Lee, Henry, Louisa and Des Moines Counties were invited to that meeting, and it attracted a large number of them.

The larger counties have instituted praiseworthy disaster programs, and some have had trial runs.

The over-all activity of all members in the State Society's business has been somewhat less than could be desired. As usual, the same few have assumed this responsibility, and hence have led in activities at the local level.

J. H. SUNDERBRUCH, M.D., *Councilor*

Deputy Councilors:

J. F. FOSS, M.D., Des Moines
 J. S. JACKSON, M.D., Henry
 J. W. CASTELL, M.D., Jefferson
 G. H. ASHLINE, M.D., Lee
 G. C. MCGINNIS, M.D., Lee
 E. S. GROBEN, M.D., Louisa
 K. E. WILCOX, M.D., Muscatine
 ERLING LARSON, M.D., Scott
 KIYOSHI FUROMOTO, M.D., Van Buren
 G. E. MONTGOMERY, M.D., Washington

NINTH DISTRICT

The councilor of the Ninth District wishes to express his appreciation to the deputy councilors for their splendid cooperation during the past year.

The Appanoose County Medical Society held regular meetings during 1958. The doctors of the county have cooperated with the Cancer Society, and the TB, Heart and Polio organizations, serving on their boards. The public school health program, including inoculations, office examinations of all pre-school children and complete physicals for all high school freshmen and athletes, was continued.

The Davis County Medical Society held regular monthly meetings during 1958. During the year, the local society conducted physical examinations for all athletes in the high school, as well as pre-school examinations. Annual physical examinations were given to all 4-H boys and girls in the county.

The Keokuk County Medical Society had its annual meeting in January, 1958, for the election of officers.

The Lucas County Medical Society held 10 scientific and business meetings during 1958.

The Mahaska County Medical Society held 10 regular scientific and business meetings during 1958. A city-wide physical examination program for school children participating in grade school and high school athletic events was carried out by Oskaloosa physicians. Panels of speakers were provided by the Mahaska County Medical Society for programs of the local chapters of the Society for Crippled Children and Adults, and the American Cancer Society, and for a meeting on adoptions sponsored by the Iowa Children's Home Society. In addition, speakers were provided for a teaching program for public health and visiting nurses sponsored by the Iowa Heart Association. The Mahaska County Medical Society held a dinner in honor of Dr. E. B. Wilcox, at which he was presented a pin and scroll and was elected to life membership.

The Woman's Auxiliary of Mahaska County was very active during the year, and assisted in numerous projects.

The Marion County Medical Society held four meetings during 1958. It has been active in the TB contact program, in county-wide polio vaccination, in tetanus-diphtheria-whooping cough immunizations and in smallpox vaccinations.

The Monroe County Medical Society had no special projects during 1958.

Throughout 1958, the Wapello County Medical Society held its regular meetings, which included scientific programs.

The Wayne County Medical Society held nine business and scientific meetings in 1958.

Three district meetings were planned for 1959. The

one at Oskaloosa for the doctors of Marion, Monroe, Keokuk and Mahaska Counties had to be cancelled because of bad driving weather on the date for which it had been scheduled. The one at Ottumwa for the doctors in Wapello, Jefferson and Van Buren Counties was held. After having been cancelled once, the meeting in Centerville for doctors in Appanoose, Lucas, Wayne and Davis Counties was rescheduled for March 3.

GEORGE S. ATKINSON, M.D., *Councilor*

Deputy Councilors:

E. A. LARSEN, M.D., Appanoose
 H. J. GILFILLAN, M.D., Davis
 R. G. GILLET, M.D., Keokuk
 A. L. YOCOM, M.D., Lucas
 R. L. ALBERTI, M.D., Mahaska
 DEXTER HAKE, M.D., Marion
 D. N. ORELUP, M.D., Monroe
 L. J. GUGLE, M.D., Wapello
 D. R. INGRAHAM, M.D., Wayne

TENTH DISTRICT

Almost without exception, the county medical societies in the Tenth District held their meetings in conjunction with local hospital groups, and were fairly active throughout the year.

The M.D.-osteopath question remains a problem in Ringgold County. The hospital board there practically insisted upon a dual staff, and thus it is said that it precipitated the departure of two of our younger men from Mt. Ayr. The councilor wonders whether this was their real reason, or whether it merely constituted an excellent excuse for their leaving.

The Madison County Medical Society vigorously opposed the Social Welfare Department's Vendor Payment Program. As this system is still in a state of flux, I feel that no further comment is needed.

There continues to be a program of continuation training for both laboratory and x-ray technicians in the area, and the meetings continue to be reasonably well attended.

HAROLD J. PEGGS, M.D., *Councilor*

Deputy Councilors:

A. J. GANTZ, M.D., Adair
 J. C. NOLAN, M.D., Adams
 G. B. BRISTOW, M.D., Clarke
 E. E. GAMET, M.D., Decatur
 J. E. EVANS, M.D., Madison
 H. J. HAUSHEER, M.D., Ringgold
 R. W. BOULDEN, M.D., Taylor
 H. J. PEGGS, M.D., Union
 C. A. TRUEBLOOD, M.D., Warren

ELEVENTH DISTRICT

During the fall of 1958, regional meetings were held in Snenandoah, Atlantic and Council Bluffs for doctors in various parts of the Eleventh Judicial District. At them, discussions took place regarding medical and social legislation and concerning Blue Shield. Approximately 50 per cent of the physicians attended them, but it is questionable whether or not the full potential of such gatherings was realized.

The medical societies in Pottawattamie, Montgomery, Cass and Page Counties held regular monthly

meetings. Those in Audubon, Shelby and Harrison Counties held meetings, most of the time, in conjunction with county hospital staffs. In Shelby County, there were monthly staff conferences, each with a speaker, and there were four additional Medical Society meetings.

Pottawattamie County held its annual Iowa-Nebraska Medical Assembly, which this year was a symposium on pulmonary diseases. Page County sponsored its annual fall program. Both of those meetings were attended by large numbers of men from this district, and they were enthusiastic over the programs they heard there.

Harrison County opened its new Community Hospital during the summer, and it has been operating near capacity ever since that time.

The Sears, Roebuck Foundation has been helpful in establishing doctors' office buildings in Shelby and Carson, and in securing physicians to practice there.

The Red Cross Blood Bank has been supported adequately throughout the area.

Auxiliaries have been active in Pottawattamie, Cass, Montgomery and Shelby Counties.

LAWRENCE V. LARSON, M.D., *Councilor*

Deputy Councilors:

HAROLD K. MERSELIS, M.D., Audubon
EINER M. JUEL, M.D., Cass
K. D. RODABAUGH, M.D., Fremont
A. C. BERGSTROM, M.D., Harrison
M. L. SCHEFFEL, M.D., Mills
H. C. BASTRON, M.D., Montgomery
KENNETH J. GEE, M.D., Page
GEORGE H. PESTER, M.D., Pottawattamie
J. H. SPEARING, M.D., Shelby

Reports of Standing Committees

COMMITTEE ON LEGISLATION

This report is being written prior to the special meeting of the ISMS House of Delegates called for February 22 to consider matters of the utmost importance relating to national legislation. Also at this writing, the 58th Iowa General Assembly, which still will be in session during the regular (April) session of the House of Delegates, is just now under way—as is the 86th Congress of the United States. In view of these facts, a supplemental report will obviously be in order at the April meeting.

The following, then, will be a current but incomplete report on national and state legislation, action taken on legislative recommendations of the 1958 ISMS House of Delegates, and other activities of the Committee on Legislation.

NATIONAL ISSUES

Forand Bill. Forand-type legislation for hospitalization and nursing-home and surgical care for 13,000,000 social-security recipients 65 or more years of age continues to be the number-one legislative threat of lay controlled and government dominated medicine for the entire country. As you know, the Forand Bill, which has already been reintroduced in Congress at this writing, failed to get out of committee in 1958, but the AFL-CIO, which is sponsoring and backing it to the limit, hopes to pave the way in this Congress for its passage in 1960, a presidential election year.

It must be noted that if this session of Congress is like other ones, not only will we have to contend with the Forand Bill but also with at least 20 other proposals similarly intended, in one way or another, to expand social security or otherwise to inaugurate a system of national health insurance.

Social Security Amendments. In 1958, as usual, Congress again amended the Social Security Act. It increased old age, survivors and disability insurance benefits by seven per cent. It provided an additional \$197,000,000 for public-assistance recipients and gave states greater flexibility in the use of federal funds for financing the medical care of the aged, the blind, the disabled and dependent children.

Doctor Draft Extension. The present Doctor Draft Law expires July 1, 1959. The House of Representatives has already passed a four-year extension, and the Senate is likely to take the same action.

Medicare. The civilian phase of Medicare will cost between \$90,000,000 and \$93,600,000 during the current fiscal year ending on June 30, or \$21,000,000 more than Congress approved. Last year, when Congress cut Medicare's civilian funds to \$72,000,000, the conference report instructed that no more than that amount be spent. However, because the restriction was not written into the law but was merely a recommendation by Congress, the Army and the Air Force have been able to shift funds from other accounts to make up for Medicare's shortages. The Navy, however, will have to ask Congress for a deficiency appropriation of about \$6,000,000.

Hill-Burton Amendments. In 1958, Congress voted a five-year extension of the Hill-Burton Hospital Construction Program, and the AMA testified in support of that extension.

Nursing-Home Loan Guarantees. At this writing, the Senate has passed a housing bill carrying authority for guarantees of nursing-home mortgages, a provision actively supported by the AMA and by the American Association of Nursing Homes. The bill now goes to the House.

Aid to Medical Schools. It appears that there will be several bills introduced into this Congress on this subject, as there were last year. One of the questions to be decided is whether U. S. grants should be used to meet ordinary operating expenses of the schools, or—as the AMA wishes—be used only for construction and the purchase of equipment.

Keogh Pension Bill. By the time this report is read, it is hoped that the Keogh Bill will have passed the House. This legislation would grant the self-employed a tax status similar to that enjoyed by corporation employees, allowing them to defer income tax payments on earnings placed in retirement plans.

Summary. Ten years ago, the AMA was following 200 measures through Congress. In the past session of Congress, it kept watch on 704 medical bills and resolutions out of the 20,604 legislative proposals introduced during the two years of the 85th Congress. In the past year, the AMA was fortunate in that it supported most of the 19 major medical bills passed by Congress, and in that not a single major bill opposed by the AMA became law.

STATE ISSUES

At this writing, over 500 bills have been introduced in the Iowa House and Senate, and at least 50 (10 per cent) of them relate directly or indirectly to health

and are being followed by the ISMS Committee on Legislation. Among them are the following.

(1) *Medical Examiner Bill* (H.F. 260 and its companion bill S.F. 247). Following the directives of the 1958 ISMS House of Delegates, the Legislative Committee has been working energetically for the passage of this measure, which would eliminate the elective office of county coroner as it now exists, and replace it with the medical examiner system.

(2) *Expansion of the Board of Health*. Again, the supplemental report will contain further details on the status of this proposal to expand the State Board of Health from the present five M.D.'s to a board composed of four M.D.'s (plus the Commissioner of Health) and six other persons from the allied health professions, plus a sanitary engineer.

(3) *Bills to Redefine Optometry* (S.F. 28 and H.F. 25). Much time has been spent by the Society in opposing these two bills because they would have the effect of broadening the scope of optometry to permit optometrists to use diagnostic and therapeutic procedures.

(4) *Mental Health Proposals*. Some 14 mental health bills are in the process of being introduced in the Legislature at this time. A further report on the passage or failure of these proposals will be contained in the supplemental report of the Committee.

(5) *Hospital Proposals* (S.F. 118, 119, and H.F. 211, 212, 88). Two of these bills, S.F. 118 and its companion H.F. 212, would raise to \$500,000 the present \$200,000 ceiling on bond issues for the establishment of county hospitals, and would provide that hospital trustees be chosen on a non-partisan basis at a primary rather than at a general election. S.F. 119 and its companion H.F. 211 would permit a municipal hospital to become a county hospital. S.F. 40 and its companion H.F. 88 would permit the present one-mill levy for additional construction at county hospitals to be raised to a maximum of 2.0 mills or 3.5 mills, depending on county population.

(6) *Other Bills of Special Interest*. (a) S.F. 146, a bill to require the licensing of opticians, is similar to one filed in 1957. (b) H.F. 111 would establish a procedure for initiating fluoridation of water or discontinuing present fluoridating. (c) S.F. 44 would make federal funds available to Iowa residents who are disabled. The moneys would be disbursed through the State Board of Social Welfare. (d) S.F. 56 and H.F. 7 would permit the suspension of an individual's driver's license for refusal to submit to a blood or chemical test for alcohol. Further details on the above and on other bills will be contained in the Committee's supplemental report.

ACTION ON OTHER MATTERS

For a time, it appeared that a bill would again be introduced in this Legislature seeking legal registration or certification of physiotherapists. The matter has been at least temporarily resolved by the Iowa Chapter of the American Congress on Physical Therapy and the ISMS. Both groups are seeking to better the status, recognition and standards of physiotherapists in Iowa on a voluntary basis. At the 1958 Clinical Session (December) of the AMA, a resolution on the entire subject of paramedical groups was sponsored by the ISMS and was adopted.

Meanwhile, an ISMS Committee on Paramedical Services has been established, upon the recommendation of the Legislative Committee, and its job will

be to improve liaison with the approximately 80 different paramedical groups now extant and to explore ways and means of bettering relations with them and avoiding conflict if at all possible.

Again at the recommendation of the Committee on Legislation, a "committee on revision of adoption laws" has been appointed to study present statutes and make suggestions for their revision.

At this writing, members of the Committee on Legislation have participated in at least 20 Blue Shield-ISMS district meetings designed to give physicians at the local level a broad picture of the operation of the State Society, of legislative proposals at the state and national levels, and of Blue Shield problems, as well as to gather suggestions, comments and criticisms from local physicians on those items.

CONCLUSION

Your chairman wishes to commend the members of the entire Committee for their diligence and devotion to duty, and for their fine attendance at the many meetings that have taken place. Hardly a day has gone by without one or more telephone conferences between the chairman and other members of the Committee and the staff. He wishes particularly to thank Dr. Frank C. Coleman, co-chairman of the Committee, for all of the time and splendid assistance he has given him. He also wishes to commend Mr. Robert B. Throckmorton, the Society's hard-working legal counsel and advocate in the Legislature, for his sage advice on many fronts. It goes without saying that without the help and assistance of the entire staff of the ISMS the work and accomplishments of the Committee on Legislation would have been even more difficult. For practical purposes, it was felt this year that the Committee's staff secretary, Mr. Ged Buckles, should assist Mr. Throckmorton "on the hill" while the Legislature is in session, and he has done a tremendous job in this. Miss Jo Hanna Bolling, the ISMS staff secretary assigned to Mr. Buckles, has been equally helpful on many occasions, not to mention several hours of overtime that she has spent on this work without compensation.

Last, but certainly not least, the chairman wishes that he could personally thank each and every one of the ISMS county legislative contact men and the other physicians who have so splendidly cooperated in response to the requests that have been made of them. In particular, he would like to thank them for traveling all the way to Des Moines for meetings with state legislators.

NOBLE W. IRVING, M.D., *Chairman*

NECROLOGY COMMITTEE

The following members of the Iowa State Medical Society died during 1958:

	Age
Louis B. Amick, Sac City	76
Walter E. Anthony, Ottumwa	69
Walter S. Balkema, Sheldon	69
William S. Binford, Davenport	83
J. Lawrence Cochran, Carroll	50
Robert C. Crumpton, Webster City	71
Valentine T. Doering, Fort Madison	77
James Dunn, Davenport	79
William C. Egloff, Mason City	57
Higdon B. Elkins, Iowa City	51
Bruce Ensley, Shell Rock	79

Glen W. Fridell, Slater	35
Oscar L. Fullerton, Redding	81
H. Frank Givens, West Bend	86
Edward J. Harnagel, Des Moines	76
Clarence L. Heald, Sigourney	90
Clyde A. Henry, Farson	85
Lester E. Hooper, Indianola	71
Bertice A. Isenberg, Lohrville	76
Florence D. Johnston, Cedar Rapids	65
Joseph M. Kerwick, New Hampton	66
Clare E. Knouf, Iowa City	40
Lewis L. Leighton, Fort Dodge	65
Charles G. Macrae, Coldwater, Michigan	73
John H. Matheson, Des Moines	53
Arthur E. Merkel, Des Moines	78
William H. Mott, Farmington	83
Kenneth Murchison, Sidney	82
James H. Murphy, Des Moines	51
James H. O'Donoghue, Atlantic	80
Paul A. Reed, Iowa City	83
George E. Rinker, Oto	81
Wentzle Ruml, Cedar Rapids	90
Joseph A. St. Onge, Sioux City	76
Joseph H. Sams, Clarion	91
Pierre Sartor, Titonka	87
Frank N. Schroeder, Ryan	80
Sophie Hinze Scott, Des Moines	87
Charles L. Seaman, Cherokee	51
Joseph W. Sellards, Clarinda	83
Robert S. Shane, Pilot Mound	72
Howard W. Smith, Woodward	76
Robert T. Spain, Conrad	83
Francis R. Sparks, Waverly	76
William H. Thomas, McGregor	78
Wilbur M. Walliker, Clinton	81
William L. Whitmire, Sumner	93
Frank S. Williams, Villisca	86
Nathan B. Williams, Belle Plaine	57
Lee R. Woodward, Mason City	73

MEDICO-LEGAL COMMITTEE

As this report is prepared, the Medico-Legal Committee has not held a meeting, but it expects to hold one prior to the Annual Meeting in April.

As directed by the House of Delegates, the Committee has undertaken a study of the entire problem of professional liability insurance. Information has been received on the methods used by the various states in handling malpractice situations, and it is being studied and evaluated.

Any results of this study will be presented to the House of Delegates as a supplemental report.

V. C. ROBINSON, M.D., *Chairman*

COMMITTEE ON ARTICLES OF INCORPORATION AND BY-LAWS

As of the publication date of this HANDBOOK, the Committee on Articles of Incorporation and By-Laws had not met. However, there will be a meeting in the latter part of March or early in April for the purpose of reviewing revisions to the Articles of Incorporation and By-Laws that have been proposed.

P. F. CHESNUT, M.D., *Chairman*

COMMITTEE ON MEDICAL SERVICE

This report will be concerned primarily with the progress of Medicare. Your chairman feels that the

sub-committee reports will cover other matters in more detailed fashion than he could possibly review them. These subcommittees have achieved excellent cooperation under the devoted guidance of experienced chairmen. Like a football team playing a tough schedule, all of us, in our eagerness to please, may have fumbled the ball occasionally, but I assure you we haven't done so intentionally or without first having felt the terrific impact of public opinion or the stiff-arm of an opponent, who may have been one of our fellow medical-society members.

Our first meeting, on September 3, 1958, at the office of the Iowa State Medical Society, wasn't just our first general meeting. It was our *only* one, primarily because the subcommittees were waiting until they had sufficient data and information to conduct a justifiable and productive meeting. Your chairman was provided the agenda for most of the separate meetings that those groups held, and was given final reports of their accomplishments. As a matter of fact, most of the subcommittees' decisions were well reported to all ISMS physicians through the Society's NEWS BULLETIN.

This, as I have said, is a progress report on Medicare and on the actions of your chairman. The original Medicare contract was negotiated in October, 1956, and the scheme has been in operation ever since. The contract expired on April 30, 1958, but was extended until August 31, 1958. A further extension, to September 30, 1958, was granted on August 8 when Mr. Wilbur Quinn and I attended a Medicare conference in Washington, D. C., a meeting that the Department of Defense had called on only 24 hours' notice.

With the exception of some 333 anesthesia and 171 surgical fees, the fees submitted in April were accepted by the government. Because of these exceptions, in accordance with the ruling made by the ISMS Executive Council on May 4, 1958, your Committee submitted three procedures for payment of anesthesia fees to the Iowa Society of Anesthesiology. It was agreed that where no agreement was reached on those three, it would then become the prerogative of this Committee to set such fees as might seem feasible, using September 30, 1958, as a deadline. In regard to the surgical fees which were to be resubmitted, it was felt that because the time was limited and because there were several surgical groups in the state that would have to be consulted, the Committee on Medical Service should review those fees and make a determination as to the revisions to be asked for. The total monetary effect was negligible, especially under the restrictions which went into effect on October 1, 1958. Your chairman therefore reviewed in detail the 171 surgical items with representatives of each of the surgical groups, hoping to get some ideas that would be more to their liking before the deadline of September 15, two weeks short of our originally allotted time.

The anesthesia society did not avail itself of the opportunity to submit recommendations, and in consequence these revised fees were submitted with the assurance that each procedure would be considered in the light of the income group, the responsibilities, the ability and the time required for the procedure, and the rarity or frequency of the occurrence, and in an effort to be fair to both parties concerned.

It seems, though, that instead of passing we probably should have punted, for this revision of items was not approved in Washington. Your Committee continued with the original contract as originally

submitted. It was felt that canceling our contract would not stop the program in Iowa, but would merely turn over the administration to Mutual of Omaha, a firm which would be most happy to handle claims for Iowa physicians.

Your Committee requested the Executive Council of the State Society to protest the drastic reductions imposed on this program by the Department of Defense. The Committee believed the Department of Defense reduced the benefits beyond the intent of Congress. We cannot list those drastic changes in the Medicare program in this report. You are referred to the Medicare Report which our Committee submitted in the NEWS BULLETIN, where the reductions in benefits, the restrictions, etc., are stated in detail. If you have misplaced your copy, write to Medicare, 529—36th Street, Des Moines 12, for another.

On Monday, December 1, your chairman attended the Conference on Medical Services that preceded the convening of the AMA in Minneapolis. A report of that conference was submitted to you through the NEWS BULLETIN. It was purely a repetition by Brig. Gen. Wergeland, AUS M.C., and Rear Adm. Kenny, USN M.C., of the reasons behind the drastic changes made in Medicare as a result of Congressional action.

The chairman wishes to take this opportunity to thank the members of the subcommittees for their diligent efforts, and to express the hope that we have made some small contribution to the welfare of the Society.

C. H. STARK, M.D., *Chairman*

SUBCOMMITTEE ON MEDICAL SERVICES TO THE INDIGENT

The Subcommittee on Medical Services to the Indigent performed its first official function on September 26, 1958. On that date, augmented by members of the State Society staff and the Society's legal counsel, it met with members of the State Department of Social Welfare, who presented a program for administering federal funds for use in providing medical care to the indigent of the state.

This arrangement, designated the Vendor Payment Program, came into being when funds were made available, through an action of the last Congress, to supplement those already appropriated as payment for limited medical services to specified categories of indigents—namely, the recipients of Old Age Assistance (O.A.A.), Aid to Dependent Children (A.D.C.) and Aid to the Blind (A.B.).

The State Board of Social Welfare called upon the State Medical Society to implement the program by establishing a schedule of fees and assuring the cooperation of enough personnel at the county level to make the administration of the program conform with the intent of the act as passed by Congress.

The program, as it was explained to the Committee at that meeting, would provide ambulatory medical service—i.e., house and office calls—to the recipients previously mentioned, and payments would be made directly to the vendor of such service by the State Board of Social Welfare through the individual county welfare boards. It was further pointed out that the patients are to have free choice of attendant as well as free choice of modality of treatment. Thus, the services of chiropractors or osteopaths could not be denied to those requesting the modalities offered by such individuals. On this point, our legal counsel

stated the position of the Iowa State Medical Society with respect to chiropractors, which is to relegate them to their proper place in the scheme of purveyors of the healing art.

The Committee was cognizant at all times of the implications and ramifications of this program, in which a sizable segment of our population is to be provided medical care at government expense. It was pointed out to the Committee that funds for medical care have previously been provided by the federal government to recipients of O.A.A., A.D.C. and A.B., but were paid directly to the recipients. These funds were somehow rarely paid to vendors of medical services. As a consequence, services were rendered to these people for such payments as the recipients chose to offer.

The new law transfers some of these funds formerly earmarked for medical care but given to the recipients, and supplements such funds with additional appropriations deemed essential to a more realistic approach to the meeting of present-day medical costs, and allots this total to the several state boards of social welfare for distribution directly to the vendors.

The Committee was then requested to submit a fee schedule for such services as are to be provided in the program. The Committee submitted fees based on the accepted Iowa Unit Fee Index that has been adopted by the Society. Based on a value of \$3.00 per unit, the Committee recommended a fee of two units for the first office visit if a complete examination is made; the same two units for a first home call; and from one to 1½ units per subsequent call.

The Committee was assured that any changes or modifications in the proposed program will be made in consultation with this Committee.

Following that meeting, it became apparent that there were certain merits to this program. Among them, is the traditional policy of our Society that payments for medical services to the indigent patients be made directly to the physician who has rendered the services. Also, the program maintains the inviolable principle of freedom of choice by the patient and the time-honored patient-physician relationship.

On November 20, 1958, the Committee appeared before the ISMS Executive Council and recommended the adoption of the program. After considerable debate, the Council accepted the recommendation of the Committee, and thus the program which went into effect on January 1, 1959, has the official approval of the Society.

This Committee, keenly aware of the many shortcomings of this program, begs the indulgence of the membership and asks their forbearance and cooperation in the implementation of the Vendor Payment Program.

The Committee acknowledges the invaluable assistance of our president, Dr. Walter Abbott, and members of the staff of our Society.

The Committee pledges continued vigilance in observing the operation of the program, at all times endeavoring to protect the best interests of the physician and the patients whom he serves.

ISAAC STERNHILL, M.D., *Chairman*

SUBCOMMITTEE ON PREPAYMENT MEDICAL CARE

Activities of the Subcommittee on Prepayment Medical Care during the past year have been mainly in

three areas: (1) A study of many articles and reports on the various problems involved in the operations of Blue Shield across the country and on the ways in which those problems have been met; (2) A movement toward closer and more consistent liaison between the Subcommittee and the Health Insurance Council, an organization representing commercial health insurance carriers; and (3) The making of several pertinent recommendations that have resulted in definite forward steps here in Iowa.

The Michigan Plan, a scheme which resulted from a survey of the insurance needs and desires of the public and the profession, was studied in detail. Michigan's answer to the problems was a series of three policies providing full service to people with incomes less than \$2,500, between \$2,500 and \$5,000, and between \$5,000 and \$7,500. The Michigan House of Delegates also offered its "Seal of Assurance" to any commercial company meeting its requirements, one of which was the principle of "community-rating," an idea which apparently no commercial company has been willing to adopt.

Health Service, Inc. (the national Blue Cross plan) and Medical Indemnity of America, Inc. (the national Blue Shield plan) were studied in relation to our local Iowa plans.

The problems of full-service coverage and of health insurance for the aged were studied in the light of their relationship to each other and to the legislative situation in which we find ourselves. Out of that study came the following specific recommendations: (1) That efforts should be continued to establish a third Blue Shield contract covering the intermediate income group, with a full-service income limit of around \$5,400 and a schedule of fees approximating 80 per cent of the usual fee; (2) That the Advance Planning Committee referred to hereafter should give immediate attention to providing full medical care through voluntary health systems to people 65 years of age and over, and/or to indigents. These recommendations have been implemented by a higher authority.

The Subcommittee on Prepayment Medical Care was assigned, following the AMA interim meeting, the task of studying the report of the AMA Commission on Medical Care Plans. The answers of the Subcommittee in fulfilling this assignment and in reply to the two specific questions asked by the AMA Trustees were (1) That free choice of physician is not absolutely necessary, but is desirable, and (2) That realizing there are closed-panel medical plans offering a good quality of medical care, the Subcommittee is unable to to condemn them all, but feels the approval of each closed-panel should stand on its own individual merits.

In further fulfillment of its assignment, the Subcommittee, taking into account the wide ramifications of the AMA Commission's report and the close relationship that will obtain between organized medicine's attitude toward it and the direction we will take, made the following recommendation which was later acted upon: That the president of the Society be requested to appoint at once an advance planning committee to handle this problem, in line with one of the recommendations of the Commission that "an appropriate committee at AMA level is needed for investigation of, guidance for, long-term solutions of, and assistance in the resolution of controversies between the medical profession and . . . third parties, [and] such a committee would be dependent upon collaboration of

similar units at the state and county medical society levels."

Members of this Subcommittee deserve the thanks of the chairman and of the entire Society membership for their interest, willingness to work and plan, and accuracy of judgment.

GEORGE G. YOUNG, M.D., *Chairman*

SUBCOMMITTEE ON VETERANS' AFFAIRS

On January 25, 1958, the Committee on Medical Service assigned to this Subcommittee the task of accumulating information on how various states handle their Veterans' Hometown Care programs, with a view to arriving at a mutually agreeable working arrangement between the Veterans Administration and the Iowa State Medical Society.

Information has been secured from Washington, Oregon, Wisconsin, Oklahoma, Michigan and Colorado, and is being evaluated. In most of the states, the program is being handled through Blue Shield.

On the day preceding the AMA Clinical Meeting in Minneapolis, last December, a conference on Veterans' Medical Care and Medicare was held. The program included discussion of AMA policy on veterans' medical care, the hometown programs, the future of Medicare, etc.

With respect to the treatment of veterans in VA hospitals, the AMA restated its opposition to the care of veterans with non-service connected disabilities in veterans' facilities. Studies have shown over the past several years that between 83 and 85 per cent of VA hospital admissions are for the treatment of non-service connected ailments, and VA officials steadfastly refuse to check on the justification that individual veterans have for signing the 10P10 form, the "pauper's oath."

As for the Veterans Hometown Care, the consensus at the conference was that state medical societies should negotiate with the VA for professional services rendered to veterans by private practitioners, rather than depend on unsatisfactory schedules between the VA and individual physicians. Further, negotiations by a state society would lead to a wider and more intensive dissemination of information on federal policies and on the types and cost of services being requested.

Your Subcommittee on Veterans Affairs will continue to study the possibility of reactivating the Veterans Hometown Care program, and urgently solicits the aid of every member doctor in presenting congressmen with strong recommendations for the curtailment or elimination of VA treatment of non-service connected ailments. We shall certainly appreciate reports from any of you on your talks with your congressmen, as well as any suggestions you may have for us.

R. C. GUTCH, M.D., *Chairman*

SUBCOMMITTEE ON HOSPITAL AND PROFESSIONAL RELATIONS

For the second year, no meetings of this Committee have been held. During the past year, only one case has been referred to the chairman. That concerned the implementation of House File 21, and the problem occurred because one northwest Iowa hospital had not been able to secure a pathologist to act as director of its laboratory.

The trustees and the administrator of the hospital would not agree to compensate any physician for acting as director. In January of this year, a temporary agreement was reached when one of the medical staff agreed to act as director without compensation. This solution was acceptable to the medical staff and to the hospital board. The staff member is to be commended for assuming this responsibility.

So far as the State Society office and the chairman of the Subcommittee are aware, agreements have been reached in all of the other Iowa hospitals. The radiologists and pathologists in the state have assumed an ever-increasing burden in carrying out this program, and its implementation is providing much improved laboratory service.

W. L. DOWNING, M.D., *Chairman*

COMMITTEE ON MEDICAL EDUCATION AND HOSPITALS

The Committee on Medical Education and Hospitals presented a trial postgraduate course at Fort Dodge last March in cooperation with the Webster County Medical Society. Fifty-two physicians were present, and many of them praised the program. Because of the success of that gathering, the Committee is making plans to hold similar meetings in other parts of the state. Woodbury, Pottawattamie and Des Moines Counties have expressed a desire to cooperate with the State Society in sponsoring postgraduate programs, and arrangements will be made to hold fall or spring meetings in Sioux City, Council Bluffs and Burlington.

Dr. Norman B. Nelson, dean of the S.U.I. College of Medicine, will make available to the Committee a detailed statistical report on the relationship between place of medical study (undergraduate work, internship or residency) and the location in which the young doctor subsequently chooses to practice. This material will be presented to the House of Delegates in April, 1959, as a supplemental report.

Taking note of a recommendation of the Reference Committee on Reports of Officers at the April, 1958, meeting of the House of Delegates, the Committee discussed the possibility of senior students' being taught "subjects relating to organized medicine." Dr. Nelson reported that the majority of senior students have been attending the Senior Day program presented in Iowa City each year by the State Society, which includes lectures on organized medicine, as well as special lectures on socio-economic subjects that are presented at various times throughout the year. The programs, at which attendance is voluntary, include talks on records and record-keeping, investments, medical and hospital insurance programs, business law and business aspects of medical practice, etc. The Committee feels that the Senior Day program and the special lectures adequately cover the socio-economic side of medicine.

The Committee, in cooperation with Dr. William K. Hamilton, of the S.U.I. College of Medicine, is disseminating information on artificial respiration and resuscitation both to physicians and to lay people. Dr. Hamilton plans to offer a short instructional course on artificial respiration and resuscitation at the University, and the Committee hopes that members of the State Society will take advantage of it, as well as of the literature and films that will be made available.

LEE F. HILL, M.D., *Chairman*

GRIEVANCE COMMITTEE

The Grievance Committee of the Iowa State Medical Society met in Des Moines on seven occasions during 1958. The attendance by all members was exceptionally good. A total of 12 grievances were investigated by the Committee.

In general, the cooperation given this Committee by members of the Society was laudable. There were, however, some outstanding exceptions. The Committee feels that the members who showed resentment did so because of a lack of understanding of the intent and purpose of the Grievance Committee.

The February 3 issue of *LOOK* contained an article entitled "A Report on Hospitals" which should convince the physicians of Iowa and elsewhere that grievances against physicians and hospitals do exist. The medical profession will think that the *LOOK* article was extremely unjust, and doctors will feel that grievances against Iowa physicians are equally so. Yet, there are some that do have merit.

The Grievance Committee came into existence to promote better relations between the medical profession and the public, and in particular to facilitate understanding between individual doctors and patients. The members of the Iowa State Medical Society must bear in mind that their colleagues who are members of the Grievance Committee spend long and arduous hours at this work, with no thought of financial gain and without hope of any other compensation for the sacrifice of their time. They analyze and discuss each case carefully and without prejudice. Only then do they issue an opinion to the individuals involved. Since all correspondence is carried on by mail, progress is slow at best.

It is the constant hope of the Committee that each grievance can be handled in such a manner that it will not end in court litigation, but instead will result in an improved understanding between the physician and the patient. In the opinion of the Committee members, most grievances stem from a lack of understanding between the doctor and his patient. Usually, when this break has been mended, the grievance no longer exists.

When a member of the Iowa State Medical Society is approached by the Grievance Committee, it is our sincere hope that he will feel that the Committee is an understanding friend, rather than a cold, calculating and authoritative organization that was designed to harass and persecute him.

To acquaint the Iowa physician with the functions of the Grievance Committee, a new and informative article has been written. It should soon be ready for distribution.

D. O. MALAND, M.D., *Secretary*

COMMITTEE ON PUBLIC HEALTH

At its annual meeting last April, the House of Delegates approved a resolution giving authority for the establishment of "The Educational and Scientific Trust of the Iowa State Medical Society." The Society's legal counsel is working out the details of its formation, and it may be completed by the time of the ISMS Annual Meeting this year, in which case a supplemental report will be given.

The Committee on Public Health has held two meetings. At the suggestion of the ISMS president, Dr. Abbott, the president of the Woman's Auxiliary has

been asked to attend the meetings in an advisory and ancillary capacity.

The chairman attended three conferences. One of them concerned the present Iowa adoption laws, and was held at Iowa City on May 26 and 27. The Committee subsequently decided to favor the proposed Uniform Adoption Act which is being studied jointly by the State Bar Association and the Law School at the State University of Iowa. The second meeting was the Tenth Annual Health Education Workshop, held in Ames June 26 and 27, on the organization of school and community health councils. Dr. Donald Dukelow, of the AMA Bureau of Health Education, was the speaker. The technic of "brain storming" was demonstrated as a valuable method of solving health problems at the local level. The third meeting was the cancer conference held by the U. S. Department of Health, Education and Welfare in Kansas City on November 20 and 21.

The Committee reviewed the material sent out by the AMA Council on Foods and Nutrition regarding food labeling in general, and in particular, considered the local problem with reference to salted buttermilk. When reference is made on the label to any constituent in a food, the requirements of Sec. 403J of the law for "Foods for Special Dietary Uses" are that all other constituents must be listed, such as protein, minerals, vitamins, etc.

The Committee approved the establishment of the Medical Milk Commission, Inc., of Iowa, provided the milk to be certified be limited to pasteurized milk.

We have cooperated with Dr. William K. Hamilton, of the Division of Anesthesiology at the University, to promote a program of education on newer methods of resuscitation, and we have approved a pamphlet prepared by the Iowa Department of Public Instruction entitled "A School Hearing Conservation Program in Iowa."

The Committee recommends to the Iowa State Medical Society that efforts be made to eliminate the compulsory premarital blood examination for syphilis. It further suggests that the Society strongly promote premarital counseling by the family physician. The Committee bases its position on the fact that the law is not accomplishing its intended purpose, since very few cases of syphilis have been detected by that means, and on the grounds that it constitutes an unnecessary economic burden on the public. The Committee does advocate the continuance of prenatal blood examinations.

E. A. LARSEN, M.D., *Chairman*

SUBCOMMITTEE ON CHRONIC ILLNESS

During the past year, no matters have been referred to the Subcommittee on Chronic Illness for action. Two matters in which the members of the Subcommittee are concerned, however, are in the developmental stage at the present time. One of these is the continuing activity of the Committee on Exfoliative Cytology, in cooperation with the Iowa Association of Clinical Pathologists and the Iowa Division of the American Cancer Society. That program has advanced to the point where lay publicity is being released on a statewide basis. A school for training cyto-screeners has been established under the direction of Dr. F. C. Coleman. Pilot studies in two counties, Polk and Johnson, have been conducted, and the work will soon be undertaken throughout Iowa.

The second matter concerns the establishment of a voluntary registry for cancer cases, and at this time a joint committee from the ISMS and the Iowa Division of the American Cancer Society is exploring ways and means of setting up a statewide registry.

HAROLD W. MORGAN, M.D., *Chairman*

JOINT COUNCIL ON HEALTH CARE OF THE AGED

In July, 1958, the Iowa State Medical Society invited the Iowa Dental Association and the Iowa Hospital Association to join with it in forming a Joint Council on Health Care of the Aged, on the model of the National Council on Health Care of the Aged. In the resultant organization, the ISMS is represented by Dr. G. G. Young, by Mr. Donald L. Taylor (as an *ex officio*, non-voting member) and the chairman.

At the first meeting, held on August 1, the potentialities of such an organization were discussed, and at the third meeting, on September 19, the following objectives were adopted as the basis for the Joint Council's future activities:

1. To cooperate with the National Joint Council to improve the health care of the aged
2. To coordinate the activities of the parent organizations represented on the Iowa Council on Health Care of the Aged
3. To study by all means available the health problems of the aging in Iowa
4. To develop as far as possible coordinated voluntary programs to solve problems that have been shown to exist in health care of the aged.

At the next meeting, held on October 9, Mr. Robert D. Blue, a former governor of Iowa and the chairman of the Iowa Study Committee on Care of the Aged, addressed the group, and at the meeting on November 6, Mr. Park Binard, administrative assistant to Governor Loveless, was the speaker.

Only at that fourth meeting did many of us start to feel that the atmosphere was beginning to change for the good. The earlier gatherings had served to acquaint the representatives with one another, and to assure everyone that the Council was not merely a sounding-board for the individual attitudes of the member groups. It was at that fourth meeting that an outline was made of the types of data the Council must have before it could begin to do anything constructive:

- A. What are the problems of the aged?
 1. How many of them are there?
 2. What are their incomes?
 3. What are their future prospects?
 - a. How many are at present covered by OASI?
 - b. How many will be covered by OASI in the future?
 4. What will be their impact upon presently existing or planned medical facilities?
 5. What is the cost of their care?
 - a. In nursing homes
 - b. In hospitals
 - c. In physicians' offices and in their own homes.
- B. What is now being done to provide payment of the cost of care?
 1. Commercial health insurance
 2. Blue Cross—Blue Shield in Iowa and other states
 3. Church, fraternal and labor groups
 4. Federal programs

5. State programs
6. Federal-state programs
7. Local programs
8. Family help
9. Individuals' helping themselves.

At the Council's January meeting, Mr. Howard Wells, executive-secretary of the National Joint Council on the Health Care of the Aged, spoke to the group and invited representatives from it to participate in an interstate workshop on the subject.

The Iowa Joint Council is considering the possibility of gathering statistical data on the care of the aged in Iowa as of a particular day. Under such a plan, questionnaires would be sent to all Iowa nursing homes, hospitals, and physicians' and dentists' offices asking for the numbers of elderly people who were treated or otherwise cared for on that particular day, for what reasons the care was given, and at what cost.

The members of the Iowa State Medical Society will be apprised, from time to time, of the progress that the Joint Council makes in its investigation, and they will, of course, be told of any action that it decides is advisable.

N. W. IRVING, M.D., *Chairman*

SUBCOMMITTEE ON REHABILITATION

The Subcommittee on Rehabilitation has not been in complete assembly during the past year. The only business that came before it was discussed in an exchange of letters and had to do with an attempt to find a candidate for nomination to the President's committee that makes an annual award to an outstanding employer of the physically handicapped. No candidate was submitted.

Two further reportable items should be mentioned here. It had been the Subcommittee's feeling that rehabilitation as a discipline should be defined and clarified for the membership of the Iowa State Medical Society. The chairman had such an opportunity when he learned that the yearly University issue of the JOURNAL could be devoted to the subject of rehabilitation. In consequence, he and several of his colleagues at S.U.I. prepared articles on the subject, and it is certain that all doctors in Iowa will have an opportunity to read them.

It is the Subcommittee's hope that in the near future a discussion conference on rehabilitation may be organized and that such a conference may provide the setting for all interested individuals to voice their viewpoints. Discussion might eventuate a better coordination of existing rehabilitation facilities and point up any needs for expansion in this field. Rehabilitation needs medical leadership, and a conference staged by the State Society would provide an opportunity for securing it.

CARROLL B. LARSON, M.D., *Chairman*

SUBCOMMITTEE ON MATERNAL HEALTH AND CHILD HEALTH

The Subcommittee on Maternal and Child Health met in the offices of the Iowa State Medical Society on October 12, 1958. Dr. Madelene M. Donnelly reported on the conference sponsored by the Committee on Maternal and Child Care of the AMA Council on Medical Service which she had attended as a rep-

resentative of the State Department of Health. The objective of that conference had been to discuss the organization and operation of perinatal mortality studies. The purpose of those proposed studies is to decrease and even to eliminate needless deaths of newborn infants through determining the possibly preventable factors associated with such deaths and bringing them to the attention of the interested parties.

The ISMS Subcommittee on Maternal and Child Health felt that since the maternal-death survey had proved very advantageous and worthwhile, a similar study of perinatal deaths, in cooperation with the AMA Committee on Maternal and Child Care, would be beneficial and should be organized. A pilot program is planned at one of the larger hospitals in the state, and efforts are now being made to initiate it.

The Subcommittee endorsed the policy and efforts of the State Department of Health in limiting the number of visitors in the maternity sections of hospitals. These limitations, it was felt, are necessary in an effort to eliminate the possibility of infectious materials' being brought into the hospitals.

Since the number of polio vaccinations being administered is much lower than had been expected, the Subcommittee felt further publicity on the polio vaccine program should be disseminated in the state. Additional publicity is now being prepared.

Another matter brought to the attention of the Subcommittee was the program being developed by the Iowa Congress of Parents and Teachers in conjunction with its parent national body. The objective of that project is to provide continuous health supervision for the child from his entry into school until his graduation. The details of the program were reviewed by the Subcommittee, and it was felt that the program as a whole would be useful, though some of the methods proposed for making the survey were questionable. This objection was presented to the proper individuals.

R. H. McBRIDE, M.D., *Chairman*

SUBCOMMITTEE ON EXFOLIATIVE CYTOLOGY

The Subcommittee on Exfoliative Cytology of the Iowa State Medical Society has worked with the Iowa Association of Pathologists, the Iowa Division of the American Cancer Society and the ISMS Subcommittee on Chronic Illness in the development of a statewide cytology program. The plans prepared more than a year ago have progressed well during the year. Those plans included: (1) the development of facilities by pathologists in Iowa for performing cytology; (2) the establishment in Iowa of a good school for cyto-screeners; and (3) the use of two counties, Johnson and Polk, for pilot studies in public education, to be conducted by the Iowa Division of the American Cancer Society.

Progress made thus far has included the following. All pathologists are now prepared to perform cytology. The school for cyto-screeners has been established under the direction of Dr. Francis C. Coleman, in conjunction with Drake University. The information relative to these procedures has been disseminated in Polk and Johnson Counties.

As an additional item of professional education, a symposium on cytology was presented at the annual meeting of the Iowa Division of the Cancer Society in Des Moines in October, 1958. It will be presented

again on the program of the ISMS annual meeting in April of this year.

All of these sub-projects having matured, it is our intention to have another meeting of the Subcommittee before the annual session of the ISMS to arrange for the Iowa Division of the American Cancer Society to begin statewide dissemination of information to the public on the value of exfoliative cytology. What is actually accomplished at that meeting will be reported at a later date.

K. R. CROSS, M.D., *Chairman*

SUBCOMMITTEE ON NATIONAL HEALTH ASSOCIATIONS

No matters were referred to this Subcommittee for attention during the year, and no meetings were held. As a result, a report is not presented.

E. B. FLOERSCH, M.D., *Chairman*

COMMITTEE ON PUBLIC RELATIONS

The Committee on Public Relations has continued to promote several of the projects that were initiated last year.

Requests for the Personal Health Records, the "Discussion of Fees" pamphlet and the "About Doctors" booklet continue to arrive, and are filled as rapidly as possible. Over 40,000 of each have been distributed.

Membership plaques for use in reception rooms or offices have been sent to all members of the State Society. The plaque was designed to bring to the attention of the hundreds of thousands of patients who visit doctors' offices each day the name "Iowa State Medical Society," and more importantly, to give them some indication of the principles and purposes that guide its activity. The plaque has been approved, and its use has been recommended, by the AMA Public Relations Advisory Committee. Several state societies have shown an interest in the plaque and have made tentative plans to develop similar ones.

The Public Relations Committee was instrumental in provoking interest in the establishment of the 1959 Hawkeye Science Fair, which will be held on March 27 and 28 at the Veterans Memorial Auditorium, in Des Moines. The Iowa State Medical Society is a co-sponsor of this event, along with the DES MOINES REGISTER AND TRIBUNE and Drake University.

The Committee has continued to encourage county medical societies to hold local public health forums. It is also making the arrangements for the annual Senior Day program in Iowa City for senior medical students and their wives.

Liaison is being maintained with the National Better Business Bureau and the Des Moines Better Business Bureau in a campaign to combat food faddism.

Plans are being made to develop an exhibit on the Iowa State Medical Society which can be displayed at various conventions throughout the state.

The Public Relations Committee cooperated with the Grievance Committee in the preparation of an article which defines the Grievance Committee's purpose and activities. The article will be printed and distributed to all members of the State Medical Society, as well as to all news outlets.

Publicity on the AMA General Practitioner Award to Dr. L. A. Coffin, of Farmington, was developed at the ISMS central office and was made available to

the AMA for distribution on a national level. Press releases were prepared for the wire services, and film clips on Dr. Coffin were produced and distributed to all Iowa television stations and the national networks.

As a future project, the Committee plans to combat the criticism of the cost of medical care by placing emphasis on the quality of care that is given. Articles will be prepared on several subjects, including medical progress, medical services, health insurance, socio-economic problems, etc. These articles will be distributed to county medical societies for use in local newspapers. It is anticipated that newspaper space will be purchased by the local medical societies.

OTTO N. GLESNE, M.D., *Chairman*

SUBCOMMITTEE ON INTERPROFESSIONAL ACTIVITIES

The Subcommittee on Interprofessional Activities has held two joint meetings with a similar committee of the Iowa Pharmaceutical Association. At those gatherings, the two groups discussed mutual problems, and they are working on two major projects on a cooperative basis.

A "get acquainted" dinner meeting is planned for the near future, at which executive personnel from approximately 50 pharmaceutical companies will be present. Subjects of interest to the physicians, pharmacists and company representatives will be discussed, in the hope that a better understanding of the policies and problems of each group will ensue.

A Code of Understanding is being developed which can be used as a guide by physicians and pharmacists in their interrelated practices. After the Code has been put into final form, it will be submitted to the proper policy-making body of the Iowa State Medical Society for approval.

The chairman of this Subcommittee is now serving as president-elect of the Iowa Interprofessional Association.

The Subcommittee would like to acknowledge the excellent cooperation it has received from Mr. D. L. Bruner, who resigned as executive secretary of the Iowa Pharmaceutical Association on January 1, 1959, and from Mr. Robert Gibbs, who is his successor.

F. M. BURGESSON, M.D., *Chairman*

HEALTH EDUCATION COMMITTEE

The Committee on Health Education has continued to provide health information through the media of press, radio and television.

"Medical Diary" films are being shown over stations KCRG-TV, Cedar Rapids; KVTU, Sioux City; and KQTV, Fort Dodge.

Liaison has been maintained with all television stations in the state, and we have received excellent cooperation from them regarding special public service projects. Each station was requested to use the polio inoculation film clips distributed by the National Advertising Council, and each station reported that the clips were used on a regular basis. The State Society also secured the AMA film entitled "The Medicine Man" for use on three Iowa television stations.

A special film produced by the State Society entitled "A Community Disaster Plan" has had extensive use throughout the state, and also has been shown

by hospitals and medical societies in Michigan, Indiana and Wisconsin.

A series of 13 "Medical Diary" films, at \$250 each, have been sold to the AMA, and it is hoped that the AMA will secure additional films from other sources so that a central library can be established which will provide films on a loan basis to all state medical societies for use on television.

The radio health programs for which the AMA furnishes transcriptions continue to be broadcast over stations WOI, Ames, and WSUI, Iowa City. Each program is 15 minutes in length, and there are 13 in a series. THE JOURNAL OF THE IOWA STATE MEDICAL SOCIETY publishes the broadcast schedules of both the television and the radio programs.

The health column entitled "Iowa M.D.'s Say" continues to appear in WALLACE'S FARMER. The articles deal with various medical subjects of special interest to farm people, and are written by members of the State Society.

The Speakers' Bureau secured speakers for four county medical society meetings and for seven lay meetings during the past year.

ROBERT B. STICKLER, M.D., *Chairman*

Reports of Special Committees

COMMITTEE ON INDUSTRIAL HEALTH

The Committee's main project during the year has been the completion of the Iowa Industrial Medical Survey. Results of this survey have been tabulated, and as of the writing of this report are being edited for publication. An attempt will be made for the survey to be published in the JAMA. However, if this is not possible, the survey would then be submitted for publication in the JOURNAL OF THE IOWA STATE MEDICAL SOCIETY.

The First Iowa Industrial Health Conference was held December 6 and 7 at the Hotel Savery, Des Moines, Iowa. The Conference was sponsored by the Greater Des Moines Chamber of Commerce and was under the direction of the Central States Society of Industrial Medicine and Surgery and the Iowa State Medical Society, through its Industrial Health Committee. Several members of the Committee attended it, and your Committee chairman had the privilege of presenting a paper containing the results of the Iowa Industrial Medical Survey.

The Committee feels it should be utilized as a reference point where any group can obtain specific information on problems involving industrial medicine. Therefore, the Committee on Industrial Health urges each delegate to inform his respective county society that this Committee stands ready to assist and advise not only physicians but management and labor as well on any matter related to the field of industrial health.

COMMITTEE ON MENTAL HEALTH

During the past year, the Committee on Mental Health, composed of 11 members of the Society, met on five separate occasions. It has been an active group, and the chairman is grateful to the members for their participation.

Initially, we concerned ourselves with a survey

of the activities of similar committees of other state medical societies, in an effort to bring ourselves abreast of contemporary thinking and activity. A significant result of this survey has been the finding that other medical societies, through their mental health committees, do more than we to educate their members in the area of mental health, mental illness and the various psychosomatic reactions. It is hoped that in the future continuing effort in this regard will be expended.

The Committee devoted much time and energy in an effort to establish and maintain proper medical standards in mental health clinics. Every effort must be made to make sure that these establishments (psychiatric outpatient clinics) do not deteriorate into mere social agencies lacking medical leadership. A statement on the subject, "Standards for Mental Health Clinics," was prepared and was published in the JOURNAL to clarify our objectives for the membership of the Society.

Closely allied to this topic is the question of the proper role for the clinical psychologist. A study of this problem resulted in the formulation of a statement of policy which was forwarded to the Executive Council of the Society. A member of the Committee on Mental Health serves on the Committee on Paramedical Services, which in turn is dealing with this problem in cooperation with a similar committee of the AMA.

During the past year, the Committee on Mental Health has advised two of its members who are serving on the Governor's Professional Advisory Committee on Mental Health, and has counseled with one of its members who serves on the Governor's Citizens Committee on Mental Health. In this way, the Committee has had a hand in furthering the program of the Board of Control of State Institutions along lines consistent with proper medical standards, for the proper care of patients entrusted to its care.

The Committee brought to the attention of the Executive Council the problem of the increasing numbers of patients currently being cared for in county homes, and the need for individual county societies to work out the problems involved in providing adequate medical care to those individuals.

Acting through the Committee on Mental Health, the Iowa State Medical Society cooperated with the Board of Control and the Iowa Academy of General Practice in setting up two teaching seminars for its members. Those meetings were held at two of the Mental Health Institutes. This effort needs to be continued and expanded. At the moment, steps are being taken for similar seminars at each of the Mental Health Institutes on the problem of alcoholism.

During the year, the Committee made contact with the State Department of Public Instruction and the Hospital Division of the State Department of Health and offered its services in an advisory capacity.

A most significant area of activity of the Committee on Mental Health has to do with the commitment laws currently on the statute books of the state. These laws need revision, and at the moment steps are being taken to design changes in time for the 1961 meeting of the General Assembly of Iowa. The task of deciding what legislation to propose will fall to the lot of future mental health committees.

PAUL M. KERSTEN, M.D., *Chairman*

COMMITTEE ON RURAL HEALTH

During the past year, the Committee on Rural Health has been active in three areas.

1. It has studied the procedures of the Sears Roe-buck Foundation and has attempted to work more closely with that organization in its efforts to assist small communities that are without doctors. The Foundation will aid in making a survey, it consults regarding fund-raising for the erection of a building, and it provides advice to the community in planning the structure and in attracting a doctor to occupy it.

2. The Rural Health Committee has worked with the Preceptorship Committee in gaining greater acceptance for this program from the members of the Society, because it feels that the experience provided through participation in the program constitutes the best means of persuading young doctors to practice in small communities. The ISMS Physician Placement Bureau can be of service in this area, too.

3. The Committee took part in National Farm-City Week in November, worked as coordinator of the activities of other co-sponsoring groups in presenting the Third Iowa Rural Health Conference, in Iowa City in March, and was represented at the National Rural Health Conference, in Wichita.

J. W. GAUGER, M.D., *Chairman*

COMMITTEE ON THE PRECEPTORSHIP PROGRAM

The preceptorship program has been well received this year. As early as January 15, a total of 122 doctors had indicated a desire to serve as preceptors, and of that number 104 had completed and returned information cards that had been forwarded to them.

During the past year, the Committee has discussed ways of improving the program. The possibility of having students serve during the winter months has been entertained. One of the difficulties which has raised some discussion in the past has centered around the doctor's furnishing board and room to the preceptee.

Cooperation for the support of this program was urged through several media of communication. We committee members felt that this publicity aided materially in the early completion of our assignment.

D. G. SATTler, M.D., *Chairman*

COMMITTEE ON BLOOD BANKING

Three major projects have engaged the attention of the Committee on Blood Banking during the past year. The first of these was the completion of the tabulation of the results of the 1957 ISMS technical blood-banking survey. The mass of information obtained through the survey made the tabulation itself a time-consuming job. The analysis and interpretation of the findings will require much additional time and thought.

A preliminary review of this statewide survey has already indicated some interesting points. Further study should bring out both the technical level that blood banking has attained in Iowa and some of the important economic aspects of the program. In addition, a part of the survey had to do with Civil Defense, and valuable information has been obtained relative to the shipping of blood, supplies, etc.

Second, a prior non-technical statewide survey, taken by the Women's Division of the Iowa Farm Bureau in cooperation with the ISMS, has been analyzed and will be useful in correlating and double-checking the information obtained in the later ISMS survey.

Third, the Committee has taken the second step toward forming and activating an Iowa Association of Blood Banks. Keeping in mind the recommendations of the 1958 House of Delegates that such an association be established, the Committee called an organizational meeting of the many respondents to its survey who had indicated an interest. That meeting was held in Des Moines on September 14, 1958, in the offices of the State Society, and was attended by a representative group of general physicians, pathologists and technologists from the entire state. Approval was given by those present to the formation of an I.A.B.B., and the constitution and by-laws of the new organization are now in the process of being written.

It was especially gratifying to note the interest and support shown by non-pathologist physicians at that meeting, and it is hoped that this interest will continue and will increase.

WALLACE RINDSKOPF, M.D., *Chairman*

WILLARD S. PHETEPLACE, M.D., *Co-chairman*

CHIROPRACTIC COMMITTEE

No formal meeting of the Committee on Chiropractic was necessary within the past year, but the group has continued its surveillance of the chiropractors' activities in the state, in cooperation with the ISMS Committee on Legislation and the ISMS staff.

It is perhaps well to repeat that there are two chiropractic organizations, both of which have both national and state headquarters in Iowa. The state and national organization which seeks to "mix" medicine with chiropractic is known as the Iowa Chiropractic Association and the National Chiropractic Association, and has its headquarters in Webster City. The Chiropractic Society of Iowa and its parent group the International Chiropractic Association both are headquartered in Davenport, and the members thereof are known as "the straights."

As usual, the "mixers" continue to seek ways and means of expanding their scope of practice. We are hopeful, as this is written, that one of their most recent attempts may be contained and that a report to that effect can be given at the ISMS annual meeting.

R. A. BERGER, M.D., *Chairman*

DOCTORS' ASSISTANTS' ADVISORY COMMITTEE

The state convention of the Iowa Association of Medical Assistants was held in Sioux City on May 17 and 18, 1958, and it was well attended and had a good variety of speakers on pertinent subjects. Your chairman and Dr. Otto W. Glesne attended that meeting.

The national convention of the organization was held in Chicago on October 31 and November 1, 1958, at which time Mrs. Marian Little, of Cedar Rapids, was chosen as national president-elect.

Two projects which have met with the approval of the State Medical Society are now being put into

operation. The first is a placement service which will soon be inaugurated under the direction of the Iowa State Employment Service. The second is a program of in-service training which, it is hoped, will be directed by the S.U.I. Extension Department.

The annual workshop for the Iowa Association was held at Clear Lake this year. It dealt with terminology and office procedures, and was highlighted by a talk by Dr. Walter D. Abbott.

The Iowa Association has 12 chapters at present, with a total membership of approximately 400. It is the feeling of the Advisory Committee that this group is making satisfactory progress. Its officers are making every effort to cooperate with the Advisory Committee and with the State Society on all of their projects, and in general the Committee is quite pleased with their attitude and their very earnest desire to give better service to their members' employers and to those doctors' patients.

FLOYD A. SPRINGER, M.D., *Chairman*

COMMITTEE ON SCIENTIFIC EXHIBITS

The Committee has endeavored to enlist more exhibitors in order that a greater variety of scientific exhibits might be presented. The exhibition booths have been altered in order to add attractiveness to them and so as to make them more adaptable to the exhibits. We have been satisfied with the increased number of exhibits that have been presented and with the very fine facilities with which we are able to work.

We strongly urge that members of the Society visit the exhibits and discuss them with the exhibitors. This interest which the members show is the only reward which the exhibitors receive for the considerable amount of work that goes into the assembling of a display.

JAMES T. McMILLAN, M.D., *Chairman*

FEE COMMITTEE

The Fee Committee of the Iowa State Medical Society has not held a meeting since the 1958 sessions of the House of Delegates.

The new Unit Fee Index, which was sent to all members of the State Society the first of the year, represents a revision of the first edition or "Red Book," made in accord with the recommendations of the interested groups that had met with the Fee Committee during 1957-1958. As such, the present Unit Fee Index should form the pattern for all future negotiations between the ISMS or its component groups and any third parties, relating to remuneration for services. In fact, all extant agreements should be revised as soon as possible so as to bring them in line with the changes that have been made. There is an apparent need to reiterate the point that units in the various major fields do not necessarily carry the same dollar values.

The Fee Committee expects and will welcome suggestions for further improvements in the Unit Fee Index. In this connection, there is increasing reason to believe that certain values as shown are out of line with those that are employed in other regions of the country—some so far out of line as to cast reasonable doubt upon their validity. Such discrepancies could seriously hamper or destroy the usefulness of the Unit Fee Index in negotiations.

Since, because of alleged legal implications, we can

apparently expect little or no help from national or regional conferences, it is suggested that the ISMS conduct necessary studies and investigations along this line altogether independently. To do so would admittedly involve some expense for the clerical and statistical work that would be involved, but the results could be well worth the investment, since they would facilitate the improvement and strengthening of the present Unit Fee Index.

WILLIAM C. ELLER, M.D., *Chairman*

COMMITTEE ON AUTOMOTIVE SAFETY

The Committee on Automotive Safety held its organizational meeting on Sunday, June 8, in Des Moines. Then, at the start of the second year of the group's activities, the previous year's accomplishments were reviewed for the benefit of the new members. Later during the meeting, Mr. Russell I. Brown, acting commissioner of public safety for the State of Iowa, was present. Mr. Brown was told of the support of this Committee for his efforts to cut down on traffic accidents and fatalities, and of its desire to help him in medical capacities. Mr. Brown replied that on occasion he would like to be able to call upon the Committee to advise him concerning the medical aspects of traffic safety, including requirements for the issuance of drivers' licenses. The Committee agreed to act in a medical advisory capacity whenever he wished.

In July, Mr. Brown appointed the chairman to be a member of his Vision Standards Committee, a group which was to study the present methods of vision testing and the possibility of improving them. The Vision Standards Committee held its first meeting on August 8 in the commissioner's office. The chairman of the ISMS Automotive Safety Committee was unable to attend, but he was represented by Dr. John T. Bakody. At that meeting, the discussion centered largely upon the technical aspects of vision testing, and efforts were initiated for finding out whether or not improvements in the present method might be developed.

At the second meeting of the Vision Standards Committee, on September 4, the chairman of the ISMS Automotive Safety Committee was present, along with Dr. Bakody and Dr. A. H. Downing as the ophthalmologist advisory. At that meeting it appeared that the present equipment being used by the Highway Patrol for the testing of vision is quite adequate and is being well operated by the members of the Patrol. Inquiry was made concerning the possibility of visual-field testing equipment, and about whether or not it would be worthwhile to institute the use of such apparatus.

Dr. Downing subsequently informed the members of the Iowa Academy of Ophthalmology about the functions of the Vision Standards Committee and about its actions to date. Dr. A. E. Braley, of the S.U.I. Department of Ophthalmology, was approached by the members of the ISMS Automotive Safety Committee, and he indicated a willingness to participate in any research project designed to check the importance of testing visual fields in conjunction with Mr. Brown's Department.

On September 30, Dr. Bakody represented the ISMS Automotive Safety Committee at the Second Women's Traffic Safety Conference, held in Des Moines.

The next meeting of the Committee on Automotive

Safety took place on October 12 in the office of the State Society. The activities of the members of the Committee, particularly in reference to the Visual Standards Committee, were reviewed for the other members. Dr. Bakody reported on the Women's Traffic Safety Conference, also. The Committee then went on record as approving proposed legislation on five points: (1) The use of a chemical test for intoxication conforming with the National Conference of Commissioners' recommendations; (2) An implied-consent law requiring any licensed driver to take a chemical test for intoxication at the direction of an enforcement officer who has good reason to believe that such a test is necessary; (3) A law which would prevent persons who draw blood for intoxication tests from being prosecuted for assault and battery or violation of rights; (4) Legalization of the breath-analyzer test as well as the straight blood test for intoxication; and (5) Legislation requiring all persons less than 18 years of age to complete a driver training course before becoming eligible for drivers' licenses. These recommendations concerning legislation were transmitted to the Committee on Legislation, where they were also approved. This information was then transmitted to Commissioner Brown.

Also at the October 12 meeting, Dr. Lee R. Martin brought up the possibility of labeling certain prescription drugs which might hamper an individual's driving. Dr. Martin considered the matter, and with the approval of the Committee, undertook to ask an interprofessional group for their study and recommendations, the latter to be made through the Iowa Interprofessional Association.

One more meeting of Commissioner Brown's Visual Standards Committee has been scheduled, after which the Automotive Safety Committee will meet for further consideration of additional projects and areas of cooperation. If a research project is to be undertaken to determine the effectiveness of visual-field testing at least in accident prone persons, the Committee will be happy to cooperate. It is also awaiting publication of the AMA booklet "Medical Guide for Physicians in Determining Fitness to Drive a Motor Vehicle," as a guide for its further activities.

L. W. SWANSON, M.D., *Chairman*

COMMITTEE ON PATIENT CARE

In accordance with the recommendation of the House of Delegates in 1958, the Committee on Patient Care has held no meetings to date, for the material which it is to review and from which recommendations will be made will have to be secured from the delegates' published handbook. An oral report will be made to the House of Delegates at its first meeting in April, 1959.

C. J. BAKER, M.D., *Chairman*

OSTEOPATHIC COMMITTEE

Your Committee has continued to study the osteopathic problem at the national, state and local levels. The July, 1958, action of the American Osteopathic Association removing the name of Andrew Taylor Still from its constitution suggests a desire to abandon cultism. The osteopathic college in Des Moines has deleted the name "Still" from its official title. At least one osteopathic college is considering absorption by a college of medicine.

These trends, while encouraging, call for careful analysis of the motivation, goals and qualifications of modern osteopathy. Your Committee feels that before medicine makes more concessions, osteopathy (1) must firmly renounce the unproved concept of "the osteopathic lesion" and (2) must cease claiming that osteopathy is a separate, distinct and unique school of healing. If these steps are taken by the osteopaths, and if the AMA House of Delegates removes the stigma of cultism, then doctors of medicine may teach in the osteopaths' schools, thus strengthening undergraduate education there.

There is evidence that Iowa osteopaths would welcome meeting with us at an official level to discuss problems and to settle differences. Such a meeting is impossible, at present, because of ethical barriers. Your Committee urges doctors to inform osteopaths not only of these barriers but also of the reasons that lie behind them, so that the "grass-roots" osteopath may add his voice to those of others within his group who are clamoring for the removal of cultism and the improvement of training.

It is known that the osteopaths favor a single (joint) licensing board to examine graduates of both medical and osteopathic colleges. Your Committee opposes such an arrangement at present, since it would tend to give legal equality to osteopathic education without evidence of elevated standards and training. The naive view of some members of our profession that joint boards "weed out" osteopaths has not been supported by the experience of states having such boards.

Your Committee wishes to call attention to the recent endeavors of the chiropractors to expand their scope of practice. This attempt in many respects parallels the course of action taken by osteopathy 20 years ago. In the past, we have been accused of being "asleep at the switch." Let it not happen again! Reports are rampant here in Iowa that chiropractors are using drugs and are using laboratory and blood analyses. Those who deprecate the chiropractic problem should know that a western chiropractic college has recently added departments of minor surgery and obstetrics to its curriculum.

The Committee and its legal counsel have given advice and "on the spot" consultation in a number of localities throughout the state where osteopathic problems existed. In general, it may be said that we are holding the line against further inroads into medicine.

The chairman wishes to acknowledge the support and aid of the Committee members. The work of Mr. Robert Throckmorton, the legal counsel, and Mr. Gerald Buckles, the staff secretary, is deeply appreciated.

JOHN M. RHODES, M.D., *Chairman*

COMMITTEE ON NATIONAL EMERGENCY MEDICAL SERVICE

This Committee has operated during the past year in conjunction with the Committee on Emergency Medical Service of the Iowa Interprofessional Association. Three meetings were held with representatives of the member health professions with the purpose of organizing and coordinating the activities of all groups.

The chairmen of the emergency-service committees of the state associations of physicians, nurses, dentists, pharmacists, veterinarians and hospital administrators

have acted together as an advisory group for planning, and they form the I.I.A. State Committee on Medical Civil Defense and Disaster Planning. In each of the eight civil defense areas in Iowa, a similar committee has been formed, with representatives from the member groups of the I.I.A. These persons, known collectively as "The Committee of Forty-Eight," have met and have acted as liaison to their professions in the various areas of the state for the purpose of disseminating information and giving aid in planning at the local level.

In addition, a county civil defense and disaster planning committee of six persons—again representing the organizations that compose the I.I.A.—has been chosen in each of the 99 counties of the state. This was a tremendous undertaking, and was coordinated by the ISMS in cooperation with the I.I.A. The members of these "committees of six" have the local responsibility of acting as advisors and staff members of the county civil defense directors. Indeed, Mr. C. E. ("Ben") Fowler, the Iowa Director of Civil Defense, has officially accepted these appointees into the civil defense organization in those capacities. He has been most helpful and cooperative. At all levels—state, area and county—the committees are chaired by doctors of medicine, in accord with the wish of all I.I.A. groups.

It is felt that a basic organization has been achieved. There are several matters that remain for the future, and some of them are currently under consideration. First, hospital emergency plans must be revised constantly and kept operative. Second, progress must be made in planning and training personnel for emergency services outside the hospitals. Standardized procedures of care need to be developed and made widely known. Efforts must be exerted constantly to coordinate medical activities with all other endeavors in civil defense. Your ISMS Committee, the I.I.A. and the Iowa Office of Civil Defense are all working toward the accomplishment of the above goals. Most of the administrative work and expense, including the dissemination of information and the record-keeping, have now been assumed by the Iowa Office of Civil Defense.

Lastly, physicians must accept the responsibility for leadership in these matters at all levels, and particularly at the local level where the real responsibility rests. All must become familiar with the problems involved, and must aid in both planning and training.

Your Committee commends the physicians of Iowa for their splendid response in accepting this sometimes thankless and time-consuming task. If—though God forbid!—a natural or a man-made disaster should befall our communities, this work would not have been in vain.

The chairman of your Committee is tentatively planning to attend a regional civil defense meeting in Colorado on April 18, so he may not be present for the Annual Meeting of the ISMS House of Delegates. For this reason, he wishes particularly to commend Dr. Marion Alberts, of Des Moines, consultant to the ISMS Committee, for his assistance on several matters. In September, Dr. Alberts spent an entire week at Brooke Army Hospital, Fort Sam Houston, Texas, attending a course of instruction on "Mass Management of Casualties." The other Committee members also have been most willing and helpful in the mat-

ters that have been assigned to them. As chairman, therefore, the writer wishes to extend his thanks and commendation to the entire Committee.

ROBERT C. HARDIN, M.D., *Chairman*

WOMAN'S AUXILIARY ADVISORY COMMITTEE

The Advisory Committee to the Woman's Auxiliary reports another successful year of activity. In the majority of counties with Auxiliary members, we find excellent cooperation and assistance is being given to the medical society whenever and wherever a project is assigned. In a county with an organized Auxiliary, a joint health project is perhaps easier to accomplish. However, with the decided increase in members-at-large, it is possible to effect many approved health projects in all areas of the state, since there are Auxiliary members everywhere to whom pertinent information can be sent.

The Auxiliary is an organization consisting of individuals who share a desire to aid an honorable profession. It exists, not just to provide entertainment for its members, but to advance community health. No Auxiliary undertakes a project without medical society approval. Every physician's wife is encouraged to become a member of the Woman's Auxiliary. Each doctor and his wife, working as members of groups in county medical societies and county Auxiliaries, can do much to maintain medicine's high standards and record of accomplishments. Each added member strengthens the entire organization and adds weight to the stands that these organizations take on important health issues of the day. With the hope of increasing the number of its members-at-large and eventually forming new county chapters, the Auxiliary is making a concerted effort to interest all physicians' wives in its goals and in the projects upon which it is engaged. Members-at-large as well as the members of organized Auxiliaries show a marked interest in professional matters and in community health projects. This year, the membership increased to 1,095, of whom 100 are members-at-large scattered through all of the unorganized counties of the state. Their goal is for the ideal 100 per cent membership of eligible physicians' wives.

The Iowa Auxiliary's Health Careers Recruitment Committee and Health Educational Loan Fund Committee, working together, have continued to accomplish much in their united projects. The Auxiliary continues to sponsor Future Nurses' Clubs for high school girls, and is happy to report that new clubs have been organized this year. The Health Education Careers Committee is actively engaged in recruiting young people for work in the health field, and has positive proof that a high percentage of FNC members enroll in nursing education courses upon their graduation from high school. A one-day state conference of Future Nurses' Clubs was sponsored in Waterloo, and more than 100 junior and senior high school girls, accompanied by their local sponsors, represented 23 clubs in attendance there.

The Health Educational Loan Fund, formerly the Nurses' Loan Fund, is now available to girls interested in paramedical careers as well as in nursing. To date, 28 girls have received loans, 11 girls are in training at the present time, and five girls will graduate from nurses' training in September, 1959. Several of the loans have been repaid in their entirety, thus

making the funds available to other students. This Fund is financed by a 50c assessment per Auxiliary member each year, plus memorial contributions. The Fund was again increased somewhat by half of the proceeds of the Benefit Dance held on Monday evening during the 1958 ISMS Annual Meeting. The other half, this year, went to the AMEF. There will be a dance during the 1959 Annual Meeting, and the sole beneficiary will be the Iowa Health Educational Loan Fund. Several county Auxiliaries have their own nurses' loan funds, in addition to assisting with the State Auxiliary's Health Educational Loan Fund.

The Health Careers Committee has again taken an active part in the work of the Iowa Nursing Careers Committee, an inter-organizational group interested in the recruitment and training of both professional and practical nurses. Representatives of the Auxiliary work in both areas.

The Auxiliary's AMEF Committee has been making every effort to increase contributions to that Fund through the use of memorial and appreciation cards, and it has sold especially designed stationery for the benefit of the AMEF.

The Auxiliary's Civil Defense Committee has urged advance planning to meet any of the possible disasters wherever its members may live. A well-prepared physician's home will, of course, serve as a model for disaster planning in the community.

Most of the organized Auxiliaries observe Doctor's Day, as the National Auxiliary has suggested. March 30 is designated as the day on which to honor all doctors, in memory of Dr. Crawford Long, who first used ether inhalation to deaden pain during surgery on March 30, 1842.

The Auxiliary's Committee for Handicapped Craft Sales reports that for the eighth year, sales were held with seven Auxiliaries participating. In this project, the Auxiliary arranges for the sale locations, obtains the necessary publicity, and provides saleswomen. The articles offered are the work of handicapped individuals under the supervision of the Iowa Society for Crippled Children and Adults. The proceeds of the sales go to the individuals who made the articles.

The Auxiliary's Legislative Committee continues to be highly active and important. The chairman and co-chairman of that group have been invited to attend the meetings of the ISMS Committee on Legislation and have been present at those meetings. The chairman attended the regional meeting of key legislative people. This Auxiliary committee has aided in conveying information to members so that doctors' wives may be informed on current and pending issues.

The Auxiliary's Public Relations Committee again presented its award for community health service in 1958. This project, in its third year, is designed to honor individuals who deserve recognition for work in health or health education activities in Iowa. The nominee must be neither a physician's wife (or other Auxiliary member), nor a paid health worker.

The MILESTONES to MARRIAGE project continues to be a popular one. The "milestones" are a series of nine letters for high school students which were recommended to the Auxiliary by the Mental Health Committee of the ISMS. The Iowa Mental Health Authority has been most cooperative in assisting with the project and making a wide distribution possible.

At the end of the second year of distribution, approximately 1,500 sets have been put into use in high

school social studies classes, home economics courses, nursing education courses and young people's groups in churches. Requests for more of the letters come into the office each week. The ISMS Mental Health Committee has recommended a new project for next year. It has asked that the Auxiliary aid in the rehabilitation of psychiatric patients who are returning to their home areas after a period of hospitalization. Plans are now being formulated for statewide participation in this work.

The Auxiliary's Safety Committee has participated actively in the Iowa Highway Safety Program. The chairman attended the Midwestern Citizens' Leadership Conference that was held in Chicago by the President's Committee for Traffic Safety. The Auxiliary was well represented at Iowa's Second Woman's Traffic Safety Conference, and it supports safety programs and cooperates with public officials in their efforts to make people safety-conscious. This Committee has been commended by the President of the National Auxiliary for the excellent safety articles that have appeared in its WOMAN'S AUXILIARY NEWS.

The Executive Council of the State Medical Society again recommended that the Auxiliary sponsor the American Association of Physicians and Surgeons Essay Contest in Iowa, and 22 counties participated in the 1958 contest. Of the three contest winners at the state level, one placed ninth at the national level, and another received honorable mention nationally. Plans are under way for greater participation in the 1959 contest. This has developed into a joint project of medical society and Auxiliary in many counties, with substantial prizes being awarded by the county societies to local winners.

As it has done during each of the past few years, the Auxiliary participated in the Senior Day Program at the S.U.I. College of Medicine last spring. The president of the State Auxiliary appeared on a mental health panel at the National Auxiliary's conference, and a past-president of the Iowa Auxiliary is chairman of the National Auxiliary's program committee for the second consecutive year. Many members have been appointed to health and education committees sponsored by the state government, and some of them have attended United Nations functions as representatives of the Iowa Auxiliary. Three district meetings were held this year at which Auxiliary councilors and other members had opportunities to become better acquainted with one another and with non-member physicians' wives.

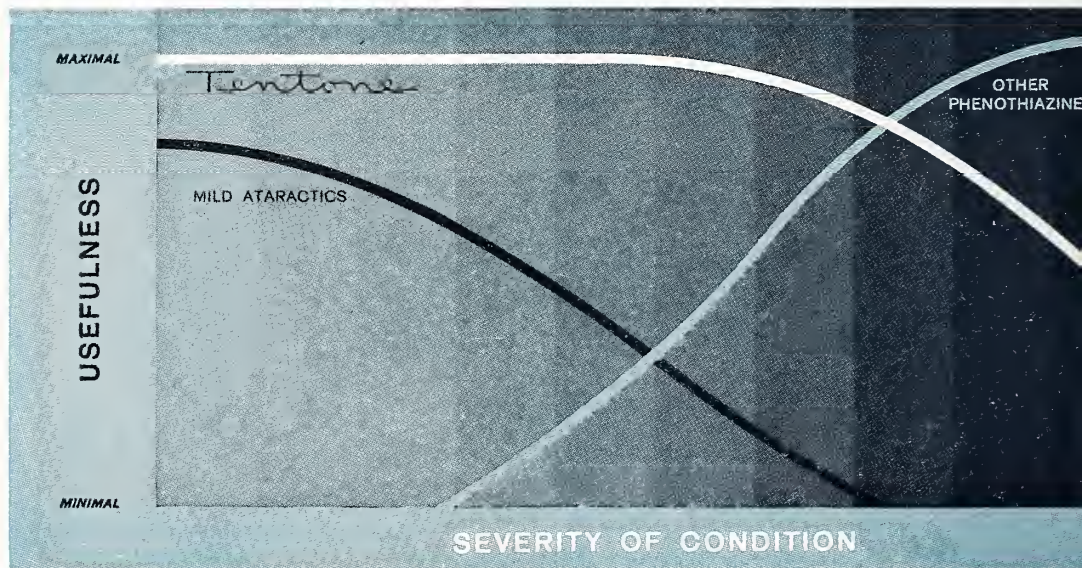
Auxiliary committees responsible for stimulating sales of the AMA publication TODAY'S HEALTH, a monthly health magazine for laymen, and THE BULLETIN, the National Auxiliary's quarterly publication, are working toward the accomplishment of goals set for them at the national level, and though they haven't yet "gone over the top," it is hoped that they will have done so by the time the Auxiliary's fiscal year closes. The president of the National Auxiliary has commended Iowa for its WOMAN'S AUXILIARY NEWS, calling it one of the outstanding such publications in the country.

The History Committee is progressing with the work of compiling a history of the Iowa Auxiliary, and the results will be available at the central office sometime in the future.

JOHN W. BILLINGSLEY, M.D., *Chairman*

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COMMITTEE ON NURSING EDUCATION AND SERVICE

It has been the feeling of this Committee that better relations between doctor and nurse and improved patient care are of equal interest to the medical and nursing professions.

The Committee supports the Iowa Nursing Careers Committee, and has been represented at all of its meetings. It is a group containing representatives of all organizations interested in the recruiting of nursing students, and through it we have an opportunity to help increase the supply of nurses. We have also been represented at the Vocational Guidance meetings and have helped to support the practical nursing program.

This Committee felt that before a comprehensive study of nursing education facilities could be made in Iowa, an estimate of the current nurse population must be secured, and the total must be broken down so as to show the numbers in the various fields. Dr. R. A. Young, of this Committee, was appointed to head a group composed of representatives from the Iowa League for Nursing and the Iowa Nurses Association to conduct a survey of nursing needs in Iowa. That joint committee has spent a great deal of time in assembling and sifting data.

According to the figures that have been gathered, there must be an increase of 75 nursing graduates per year if Iowa is to reach the national figure of 300 nurse graduates per 100,000 population.

A study of nursing certificates issued on the basis of reciprocity has shown that almost twice as many nurses left Iowa as entered it during the past six years, and no explanation could be found for such a tremendous outflow. Perhaps serious consideration should be given to the possibilities of making Iowa programs more attractive to potential entrants, and of doing a better selling job so as to keep Iowa graduates in Iowa.

Although the three-year program is a traditional type of training, and although all of the nursing schools in the state are enrolling all of the students that their facilities will accommodate, there still is a decided shortage of nurses for the care of the sick. At the present time, there is one four-year degree program—at S.U.I. There are only 22 three-year diploma programs, of which eight are fully accredited. There are now seven 12-month practical-nursing programs, and we now have licensed practical nurses as well as registered nurses. Nevertheless, the shortage of nurses for good patient care continues.

In 1957, the survey reveals, there were 4,456 professional nurses in Iowa hospitals and nursing schools. Of that number, only 1,997 were general-duty, full-time; 1,062 were general-duty, part-time; and 94 were non-classified nurses. The balance were classified as administrators, instructors, supervisors and assistants, or special-duty nurses. In the same year, it was found that there were 294 public health nurses, 123 full-time industrial nurses, and 195 private-duty nurses. There were 476 practical nurses working in hospitals. In addition, the survey revealed 1,188 attendants, 2,644 aides, 263 orderlies and 349 ward maids.

In an effort to help Iowa meet its nursing requirements in the next 10-year period, the Committee is exploring the possibility of a two-year program, and feels that through such another training field an im-

provement in patient care could be secured. That is something in which we are all primarily concerned. A two-year program—possibly in a junior college—would attract the “college-minded” young person and prepare her to be a competent, well-motivated nurse for the care of the sick.

To obtain first-hand information on a two-year program—to learn the groundwork required, the problems to be faced in a scheme of this sort, and the feeling regarding this program in states which already have inaugurated it—we corresponded with the state boards of nursing in eight states. Much of the material that we received from them indicated their cooperation in such programs. Twenty colleges and one hospital were queried regarding their “college-controlled programs in nurse education leading to an Associate degree.” Their replies were all most encouraging, as were the results they gave us of the follow-up studies they had made on their two-year graduates.

Since faculty is a major problem in all nursing schools, perhaps junior college programs are especially likely to succeed. It has been learned that there are some communities in Iowa that are interested in two-year junior college nursing programs. This Committee has also met with representatives of the ILN and INA, and has conferred with the IHA, regarding steps that could be taken jointly to increase the nurse population in Iowa through the addition of this type of training.

We know that it is the desire of the allied fields to make all possible use of facilities now in existence for the training of nurses.

The following questions are being considered by this Committee:

1. Would a two-year program be desirable?
2. What effect would such a scheme have upon the present nursing schools and on the supply of nurses?
3. How could we get people in general and the various institutions interested in a two-year program?
4. How could the great problem of qualified faculty be met?
5. What legal steps would such a program necessitate?
6. What can the doctor do in helping to work out these problems, and in particular, how can he aid in solving the curriculum problem?

The Committee agrees that the profession is desirous of better patient care and wants to know where to start in helping to provide it. The joint committee is continuing its study and will compile a report and make recommendations. If any member of the State Society has any suggestions to make regarding the providing of better nursing care for the sick, the Committee will welcome his assistance, for its primary purpose and desire is to work with the nursing profession to get more nurses and see that they get the best training possible.

A thorough study is planned as a means of familiarizing this Committee and all others who are interested in the health fields regarding the curricula of the various types of nursing education programs and regarding the accreditation of nursing schools.

HENNING W. MATHIASSEN, M.D., *Chairman*

HISTORICAL COMMITTEE

During the past year, the JOURNAL OF THE IOWA STATE MEDICAL SOCIETY has printed histories of medicine in

Kossuth County, by the late Dr. C. H. Cretzmeyer, of Algona, and in Clay County, by Dr. E. E. Munger, Jr., of Spencer.

Medical histories have been promised for Cedar County, by Dr. H. E. O'Neal, of Tipton, for Madison County, by Dr. Glen J. Anderson, of Winterset, for Sac County, by Dr. J. R. Dewey, of Schaller, for Pocahontas and Humboldt Counties, by Dr. Charles L. Jones, of Gilmore City, and for Wright County, by Dr. George E. Schnug, of Dows.

A series of articles of a historical nature, comparing various present-day conditions with those of 30-50 years ago, has begun appearing in the JOURNAL. The first of them, by Dr. Gordon F. Harkness, of Davenport, was in the January, 1959, issue, and the second, by Dr. Wendell L. Downing, of Le Mars, was in the March number.

Special thanks are due to the new member of the Historical Committee, Dr. P. W. VanMetre, of Rockwell City, who is enthusiastic, very cooperative and much interested in medical history.

JEANNETTE DEAN-THROCKMORTON, M.D., *Chairman*

COMMITTEE ON GROUP INSURANCE

This Committee has been quite active in recent months studying proposals for group life insurance and major hospital expense insurance.

We completed our study of group life insurance and recommended a proposal to the Society. It received approval, and is now in the process of being underwritten. This group life insurance coverage was submitted through Holmes, Prouty, Murphy and May, to be underwritten by the Bankers Life Company of Iowa. The Committee feels that it is a very fine program, and it hopes that the required 50 per cent participation will be secured so that the plan will qualify for issue. Fine progress is being made so far in securing applications, but much remains to be done before the plan can qualify. We hope that the members of the Society will lend their support to this program.

The Committee is at present engaged in studying group proposals submitted by Blue Cross and Blue Shield for the members of the Society and their dependents and employees. The problem is very complex, and it requires considerable study. We hope to be able to present a recommendation in the very near future covering this matter.

The Committee has maintained liaison with Holmes, Prouty, Murphy and May, the Des Moines agency which is handling the State Medical Society's group accident and health program. We are told that the program has been functioning satisfactorily, and that no unusual problems or complications have arisen during the past year. We are informed that the number of claims being received is greater than it was in the preceding year, but that the over-all experience, so far, has been quite satisfactory.

The Committee invites any suggestions or criticisms that members of the Society may wish to offer concerning any of these programs.

W. O. PURDY, M.D., *Chairman*

IOWA BAR LIAISON COMMITTEE

The Iowa Bar Liaison Committee has had no specific problems referred to it within the past year, and hence has held no meetings. However, the Com-

mittee is gratified to note that several county medical societies and bar associations have held joint meetings to discuss, among other matters, the "Standards of Practice Governing Lawyers and Physicians" developed by the Committee and approved by the ISMS House of Delegates in 1956. The Committee members have heard many comments both from lawyers and from doctors about the mutual benefits derived from such meetings, and it is hoped that they will continue.

DONALD C. CONZETT, M.D., *Chairman*

MEDICARE CLAIMS COMMITTEE

The Medicare Claims Committee was created by action of the ISMS Executive Council at its May, 1958, meeting. So that it may be of greatest assistance to the Society's staff in the administration of Medicare payments, the membership of the Committee is made up of physicians practicing in or near Des Moines.

Since its appointment, the Committee has met twice to study individual claims. Slightly less than five per cent of the total Medicare claims processed have been brought before the Committee for examination and review. In the administration of claims, the Medicare program in Iowa is functioning well, and very few problems have been reported.

A. B. PHILLIPS, M.D., *Chairman*

COMMITTEE ON PARAMEDICAL SERVICES

The Committee on Paramedical Services was appointed by Dr. Abbott in November to study the problems arising in connection with the relations between doctors and physical therapists, psychologists, medical technicians, x-ray technicians and any or all of the other paramedical personnel, as the need or occasion arises.

On December 17, this Committee, together with the Society's legal counsel, met with two representatives of the Iowa Chapter of the American Physical Therapy Association and a member of that organization's national staff. The purpose of the meeting was to explore the need and the feasibility of securing a law requiring the licensure of physical therapists, such as their organization was planning to have introduced during the 1959 session of the Iowa General Assembly.

The Committee agreed with the purposes behind their desire for such a law—enhancement of the professional stature of physical therapists and protection of the public against unqualified practitioners—but did not agree that the proposed law was the best way of accomplishing those purposes. The Committee was able to persuade them to shelve their bill, at least for the time being, on the strength of the Committee's counter proposal, which consisted of three parts:

1. Continuing liaison between the ISMS Committee on Paramedical Services and the American Physical Therapy Association

2. Cooperation between the ISMS and the APTA in an educational campaign directed at both physicians and general public, defining the art, explaining the qualifications and training required of the practitioner, the need for the services of physical therapists, and the aims of their organization

3. A cooperative effort, relying on the Basic Science Law and the Medical Practice Act, through the Board of Medical Examiners, aimed at eliminating the prac-

tice of physical therapy where done without medical prescription and supervision.

The Committee's efforts and actions are in line with the resolution that the AMA House of Delegates approved at its December meeting, encouraging voluntary registration of physical therapists and other paramedical workers and opposing, at this time, their licensure by government.

F. EBERLE THORNTON, M.D., *Chairman*

ADVANCE PLANNING COMMITTEE

The Advance Planning Committee was created because, as the Committee on Prepayment Medical Care had told the Executive Council, any opinion that the ISMS might offer to the AMA regarding the Report of the AMA Commission on Medical Care Plans should be based on a careful consideration of other trends as well as on the increasing intervention of third parties in the practice of medicine.

After a careful study of the AMA Commission's report, the Advance Planning Committee prepared a statement of what it believed to be the attitude of Iowa physicians toward closed-panel practice and toward free choice of physician. That statement was submitted to the ISMS House of Delegates at its special session in Des Moines on February 22, 1959. The Reference Committee to which the report was sent at that meeting formulated a less explicit statement in answer to the two questions that the AMA had posed, and the House, at its final session, adopted the phrasing that the Reference Committee had substituted.

The Advance Planning Committee also spent some time in constructive study and planning for the future. The most important result of that work was its recommendation that, in addition to providing surgical and in-hospital medical insurance for the aged, the Iowa Medical Service should be encouraged to make plans for enabling the same group of people to prepay home and office calls as well as the other facets of their health care, if and as soon as feasible. The Committee thought that such a program might best be tested for a year in no more than two or three pilot counties.

GEORGE G. YOUNG, M.D., *Chairman*

PUBLICATIONS COMMITTEE

During 1958, the JOURNAL OF THE IOWA STATE MEDICAL SOCIETY continued presenting the papers that had been read at the Society's Annual Meeting, together with unsolicited manuscripts contributed by Iowa doctors, as room could be found for them. The principal innovations have consisted of a series of articles collectively entitled "Blue Shield States Its Case," which was introduced in December, and a series of papers on medico-economic and public relations topics, some of which had been read at the 1958 Annual Meeting, but others of which came into our hands by other means.

The elimination of section meetings at the 1959 Annual Meeting, and presumably at similar gatherings in the years to come, will necessitate a change in the means by which the JOURNAL gets a majority of its scientific papers. We should like the cooperation of the officers and program chairmen of specialty groups, regional medical associations and the Iowa Academy of General Practice in arranging to let the JOURNAL have publication copies of the papers delivered at their separate meetings.

Within the past few months, we have begun publishing comparatively brief clinical reports from ISMS members under a new heading, "Case Studies," and we hope that more doctors who feel that their colleagues may profit from particular ones of their experiences will avail themselves of the opportunity so provided.

As usual, we assure the members of the Society that we welcome whatever criticisms and suggestions they wish to offer.

EVERETT M. GEORGE, M.D., *Editor*

Dr. Walter D. Abbott, president of the Society, secured the privilege of the floor for Mrs. H. C. Merillat, president of the State Auxiliary, so that she might give the House a review of the activities of her organization. Thereafter, Dr. Abbott gave the following report of his own:

PRESIDENT'S ADDRESS

Every servant must render an account of his stewardship, and as I draw to the close of my term, I wish to render mine. This past year has been an active and somewhat turbulent one for the Iowa State Medical Society, but I point with pride to the considerable number of projects that have been undertaken, and in many instances accomplished, during that length of time.

Such achievements as have occurred during my presidency must be credited to my fellow officers and to the Society's committeemen and staff members, who worked in complete harmony and put in long hours, far beyond the call of duty.

Although this report will duplicate that of the Board of Trustees in some respects, I feel justified in stressing many serious and important points. This account of stewardship will cover five topics: (1) Major Projects; (2) Committee Achievements; (3) Special Events; (4) Staff; and (5) Finances.

MAJOR PROJECTS

Blue Shield. Heading the list of the Society's major accomplishments during the past year is the development of a fine working relationship between Blue Shield and Blue Cross. In brief, mutualization of Blue Cross-Blue Shield sales and public relations was consummated, and a new Department of Planning and Personnel was created. It also will operate on a joint basis.

Needless to say, operational changes of this magnitude cannot be effected without meticulous planning and concerted effort. Your Board of Trustees spent untold hours in strengthening the relations between Blue Shield and Blue Cross, and has appreciated having opportunities to provide counsel to the officers of Blue Shield. Now, the relations between the Society and Blue Shield, and accordingly between the Society and Blue Cross, are the best that they have been since the plans were formed.

Medicare. The Society has continued as the fiscal agent for the Department of Defense in conducting

Medicare affairs in the State of Iowa, and has paid \$291,876.81 to Iowa physicians during the past year. It has been recommended that the existing Medicare contract be extended for a period of one year.

Joint Council on Health Care for the Aged. Last summer the State Medical Society invited representatives from the Iowa State Dental Society, the Iowa Hospital Association and the Iowa Nursing Home Association to meet for the purpose of forming the Iowa Joint Council on Health Care for the Aged, patterned after the national council of similar name. It is my understanding that ours was the first state council of its type formed in the nation, and that it has served as a model for similar councils in other states. A report of its activities has appeared in the HOUSE OF DELEGATES HANDBOOK as a part of the report of the ISMS Subcommittee on Chronic Illness. The Iowa plan was explained at a national meeting on health care of the aged, in Chicago during February, by a representative from each of the member organizations in Iowa.

Disaster Planning. The ISMS was the moving force that prompted the Iowa Interprofessional Association to assume responsibility for forming and activating community disaster committees. Your Society began this work, and when tentative plans for an Iowa program had been decided upon, the work of putting them into final form and carrying them out became the responsibility of the Iowa Interprofessional Association and the Iowa Civil Defense authorities. The Society has continued its interest in this activity, and will work toward keeping this essential project alive.

May I call your attention to the fact that there is a 200-bed emergency hospital on display on the lower level of this auditorium? It is indicative of the splendid cooperation that has been given by all of the participants in the disaster-planning project, and it deserves your careful examination.

Blood Banking. The ISMS Blood Banking Committee has completed the formation of the Iowa Association of Blood Banks, in keeping with the recommendation made by the House of Delegates in 1958. The constitution and by-laws for the new organization are now being prepared.

Educational and Scientific Trust. On authority of the House of Delegates, the Society is working toward the establishment of "an educational and scientific trust." You will recall that the House of Delegates approved the forming of such an institution at its meeting last April. Its purpose is to further educational, scientific and charitable work in the field of preventive medicine and public health.

Legislation. Since the first of this year, the ISMS Committee on Legislation, the officers of the Society and the staff have worked daily to keep informed on bills that have been introduced in the Iowa Legislature relating directly or indirectly to health care. They have also followed the bills introduced into the 86th Congress that pertain to health.

It goes without saying that during a legislative year, a considerable burden is placed on the members of your Legislative Committee, the officers of your Society, your Legislative County Contact Men, and accordingly, on your staff.

Regional Meetings. The Trustees recommended to the House of Delegates last April that the Fall Conference of County Society Officers be replaced by regional meetings at which the problems and projects of the State Society might be taken to all Iowa doctors in or near their home communities. With the approval of the House of Delegates, Blue Shield was asked to cooperate in this grass-roots educational program, and 25 such meetings have been conducted throughout the past year. The attendance totaled 641 physicians and 238 physicians' wives. Auxiliary members were not included in all of the meetings. A word of commendation is due to the Society's staff members for their untiring efforts in helping the councilors set up these many gatherings within a limited period of time. Also, our thanks are due to the officers of the State Society and Blue Shield, and staff members of both organizations, who traveled many, many miles, sometimes in the late hours of the night or early in the morning before and after participating in these programs.

Special Meeting of the House of Delegates. As you know, the ISMS House of Delegates was called into special session less than two months ago, on 30 days' notice. At that time, the House congratulated the staff for the fine and thorough job it had done in organizing and disseminating information on the subjects that the House was to consider at that time, but I wish to add my own acknowledgment to the staff for the fine work it did under those emergency circumstances.

The actions of the House of Delegates at that special session have been reported to you through an ISMS NEWS BULLETIN, and the minutes have been published in the April issue of the JOURNAL. The committees responsible for carrying out the actions of the House of Delegates will present reports of their progress at this meeting.

Vendor Payment Program. The Subcommittee on Medical Services to the Indigent began work on the Vendor Payment Program last September. After the Executive Council had approved the plan, it fell to the Board of Trustees to put it into effect.

Needless to say, we have sailed through some rough waters. The House of Delegates, meeting in special session, voted temporarily to tolerate but to disapprove of the Vendor Payment Program. In taking that action, it asked for further negotiations with the Department of Social Welfare. The House directed that an appropriate committee arrange for a system whereby (1) the program would be conducted in a manner that would assure the maximum possible amount of local control, or (2) the vendor funds might be allocated to private voluntary health insurance systems for coverage of persons entitled to government assistance of this

sort. These areas have been explored, and the appropriate committee will report its findings to the House of Delegates.

Annual Meeting. The staff has worked closely with the officers of the Society, following the directions of the House of Delegates, in planning this year's annual meeting. In my opinion, an excellent format and program have resulted.

Iowa Unit Fee Index. The IOWA UNIT FEE INDEX, a revision of the earlier IOWA RELATIVE VALUE SCHEDULE, has been prepared and distributed to members of the Society. This INDEX is used as the basis for the Society's negotiations with Medicare, with the Department of Social Welfare, with Blue Shield, etc.

Physician Distribution Survey. The first stage in a comprehensive survey of physician distribution in Iowa has been finished. In it, a tabulation has been made of the number of doctors of medicine in practice and the ratio of physicians to population for each Iowa county for each of the years 1932 through 1958. This information was requested by the Committee on Legislation for its use in the Iowa Legislature. During the coming months, supplemental data will be gathered so that, county by county, the figures can be broken down to show the number of physicians in private practice and the numbers who are engaged in general practice and in each of the specialties. That information, along with data on the ages of doctors now in practice in each county, on the medical schools from which they graduated, and where they interned or served residencies prior to entering practice here, will provide the Society a factual basis for its attempts to make sure that adequate medical care continues to be available throughout the state in years to come.

As I understand it, a supplemental report of the Committee on Education and Hospitals is to be presented during this meeting, containing some pertinent facts on this problem that have been gathered by the administration of the S.U.I. College of Medicine.

It is the feeling of the officers of your Society that one of the most serious problems we face today is that of physician distribution. It is believed that very serious consideration should be given to the development of a campaign—perhaps through the Executive Council and the Committee on Rural Health—to show good faith to the people of Iowa by attempting to keep medical services readily available to all communities.

The Journal of the Iowa State Medical Society. The JOURNAL continues to improve from year to year, and we think it compares favorably with the publications of other state societies of comparable size.

Hospitality Suites at AMA Meetings. The ISMS joined with the other state medical societies in the North Central Conference in sponsoring a hospitality suite in Minneapolis during the Interim Ses-

sion of the AMA last December. We believe it was a very worthwhile project, and from all reports it was a tremendous success. As has been reported to you on other occasions, the ISMS operates a hospitality suite of its own at annual meetings of the AMA, but it has not followed the practice of having one at the interim meetings.

COMMITTEE ACHIEVEMENTS

Most of the State Society's committees were active during the past year. Here are some of their most important contributions.

Committee on Medical Service. This group has been responsible for the operation of Medicare and has coordinated the work of four subcommittees.

Subcommittee on Prepaying Medical Care. This Subcommittee originated the proposals for the new Blue Shield contracts, and performed the initial study of the report of the AMA Commission on Medical Care Plans. In addition, it has served as liaison between the Society and the Health Insurance Committee of the private insurance industry.

Subcommittee on Medical Services to the Indigent. As I have already said, this group developed the Vendor Payment Program.

Committee on Medical Education and Hospitals. This Committee is developing plans for regional postgraduate courses similar to that which was held in Fort Dodge last year.

Grievance Committee. This remains one of the Society's most active committees. It has developed a special article explaining its functions and will distribute it not only to physicians but to public information outlets as well.

Public Health Committee. One of this group's major projects is the educational and scientific trust.

Public Relations Committee. This Committee developed the ISMS membership plaque, which the AMA Public Relations Advisory Committee has seen fit to approve and to recommend to other state medical societies throughout the country.

Health Education Committee. This group has sold 13 of its Medical Diary films to the AMA for use by other state societies.

Industrial Health Committee. Late last year, the Industrial Health Committee helped present the First Iowa Industrial Health Conference, and it has completed a report of the Iowa Industrial Medical Survey for future publication.

Committee on Mental Health. This group prepared a statement entitled "Standards for Mental Health Clinics" for publication in the JOURNAL, and devoted much time and effort to the establishment and maintenance of proper medical standards in mental health clinics throughout the state.

Committee on Rural Health. During the past year, this Committee was a co-sponsor and coordinator of the Third Iowa Rural Health Conference.

Committee on the Preceptorship Program. This

Committee accomplished its objective of obtaining a preceptor for each junior medical student at the S.U.I. College of Medicine.

Medical Assistants' Advisory Committee. The men who compose this Committee helped to inaugurate two important programs—a placement service for medical assistants, which will be under the direction of the Iowa State Employment Service, and an in-service training program for medical assistants, which will be directed by the S.U.I. Extension Department.

Fee Committee. As I have already said, this Committee published the IOWA UNIT FEE INDEX, and sent a copy to each member of the Society.

Automotive Safety Committee. This Committee has acted as a medical advisory to Mr. Russell Brown, the State Commissioner of Public Safety.

Committee on Nursing Education and Service. This group cooperated with the Iowa League for Nursing and the Iowa Nurses Association in conducting a survey of nursing needs in Iowa.

Committee on Group Insurance. This Committee completed a study of group life insurance offerings, and recommended a proposal to the Society. It received approval, and is now in the process of being underwritten.

Committee on Paramedical Services. This group has directed its efforts toward arranging for the voluntary registration of physical therapists and other paramedical workers and opposing, at this time, their licensure by government. The Committee was able to persuade the Iowa Chapter of the American Physical Therapy Association to shelve its bill to require the licensure of physical therapists.

Advance Planning Committee. This Committee helped in preparing the Society's statement regarding closed-panel medicine and free choice of physician.

SPECIAL EVENTS

Hawkeye Science Fair. Late in March, the Iowa State Medical Society was a co-sponsor of the Hawkeye Science Fair, along with Drake University and the DES MOINES REGISTER AND TRIBUNE. The Fair attracted outstanding high school scientists from throughout the state, and through the efforts of a tripartite executive committee, 175 exhibitors presented outstanding pieces of thought and work. As a result of the efforts of the three sponsors, trips, scholarships and other worthwhile prizes were available for presentation to the prize-winners. The Fair was an outstanding success, attracting more than 7,000 people, and gaining much favorable publicity for the Iowa State Medical Society as one of the co-sponsors.

AMA Outstanding General Practitioner Award. The ISMS staff worked closely with the AMA Communications Division in arranging the publicity that followed the election of Dr. L. A. Coffin, of Farmington, as the AMA General Practitioner

of the Year. Earlier, upon instructions from the ISMS House of Delegates, your State Society's staff had developed Dr. Coffin's brochure, a document that was essential to his candidacy for the national award.

STAFF

At present, the ISMS staff consists of 13 people, though there have been as many as 14 in the Society's employ.

An executive director administers the business affairs of the State Society and is responsible to the Board of Trustees.

There are two executive assistants. One of them assists the executive director in formulating public relations projects and is responsible for health education and public information through radio, press and television. The other is responsible for the maintenance of all membership records and for the purchase and supply of office material, as well as being staff secretary to the Woman's Auxiliary.

An administrative assistant is in charge of Medicare, is the Society's accountant and is, essentially, its office manager.

The managing editor of the JOURNAL is responsible for the preparation and publication of the JOURNAL, and also works on special research and writing assignments.

Two field secretaries are responsible for maintaining liaison between the headquarters office and the members of the Society throughout the state. They have also been presenting organized medicine's point of view on health legislation to the members of the Iowa General Assembly.

Six secretaries, in addition to performing regular stenographic duties, help carry out specific State Society projects.

All staff members have specific committee assignments. There are 43 standing and special committees of the Iowa State Medical Society, of which 233 physicians are members.

Words are inadequate to express my sincere appreciation for the loyalty and efficiency of your State Society's staff. One cannot fully know the quality of their work unless he has the privilege and opportunity of working with them.

FINANCES

It is my opinion that money matters are the prerogative of the chairman of the Board of Trustees. Therefore, I shall leave it to him to report the financial transactions of the Society and to present the Board's recommendations.

CONCLUSION

This has been my account of my stewardship. There are parts of it that you may approve, and others that you may disapprove. Thank God we are living in America, where democracy flourishes and where a man may voice his thoughts with complete honesty and need fear no reprisal.

I urge you gentlemen to search your souls in reaching a considered opinion on the ways in which we can best extend and expand our care of the sick. Please don't let lust for the dollar, in all its ugliness, obscure your God-given responsibility as physicians. And don't let cunning politicians, with their nefarious schemes, divert you from your high principles, lest we physicians be divided and conquered!

We must not be stubborn in resisting all change. Rather, we must take the lead in assuring medical services to the least fortunate people in our society, even if in so doing we undertake some personal sacrifices. Actually, our only alternative is to submit to totalitarian measures under which we would be unable to fulfill our appointed function.

Our liberty can be maintained if we exercise caution, unselfishness and dignity, and if we realize that freedom can be preserved only through a positive approach to present-day problems. Thus, in the name of God, I beseech you to adjust your thinking to realities and to work together! As quarreling individuals, we are sure to let our beloved ship *Organized Medicine* flounder on the shoals of government control; as a unified crew, we can hold it to its accustomed course!

(Dr. Abbott's address was referred to the Reference Committee on Reports of Officers.)

The Speaker then called for supplemental reports, and following their presentation to the House of Delegates referred them to the proper reference committees for study.

SUPPLEMENTAL REPORT OF THE BOARD OF TRUSTEES

(Referred to the Reference Committee on Reports of Officers for study and recommendation.)

Since the President has discussed adequately most of the important projects of the State Society during the past year, the supplemental report of the Board of Trustees will merely pinpoint portions of the President's statement. We recommend that the President's Address be referred to the appropriate reference committee for study as a part of the Board of Trustees' report.

Appearing in the HANDBOOK are reports prepared by the Society's standing and special committees, councils, officers, etc. It speaks well for the work of the Society, and is one of the most complete handbooks ever compiled. Your special attention is directed to the Secretary's Report, which provides considerable information on the work that is carried on in the headquarters office. The Treasurer's Report is also deserving of careful scrutiny. It portrays the Society's financial circumstances, and explains expenditures of the past year. On the subject of finances, we want to discuss briefly the matter of dues.

In the years 1955 and 1956, each member of the Society was assessed \$25 in special dues, and of the total dues charged each member, \$10 was earmarked

for the Iowa State Medical Society's Educational Loan Fund. Then, in 1957, the dues were established at \$85, which was the same amount as in the previous two years.

Since 1957, the Society's reserves have been replenished to the present \$60,000 plus level, and each year's expenses have been met with the Society remaining in the black. In 1960, the dues are to be reduced \$10, which will bring to an end the collection of funds for the ISMS Educational Loan program. By agreement, when the student loan plan was established, \$10 from the dues of each member was to be set aside for a period of five years.

As you know, the Society's only source of income is dues of the members. Ninety-five per cent of the funds on which we operate are taken from dues. Therefore, even though the expenses of operation have risen each year, our income has remained at an almost rigid level. What with rising costs and increasing activities of the Society, we are once again approaching the time when our anticipated income will not defray actual expenses.

It is estimated that expenses in 1959 will exceed the amount of the budget by approximately \$10,000. This expected deficit will not occur because of any single large expenditure, but rather a modest increase in many of the budget items. Of the 27 expense items listed in the 1959 Iowa State Medical Society budget, 17 show an increase over 1958; 2 a decrease; and 8 are the same.

Facts seem to indicate a continued broad scope of activity for your Society, which we realize must be maintained if the ISMS is to continue to be recognized as one of the leading state medical societies in the country.

As mentioned earlier, the dues for 1960 are scheduled to be reduced \$10, but in view of the anticipated financial deficit, the Board of Trustees respectfully recommends to the House of Delegates that this reduction be \$5 instead of \$10.

At the special meeting of the House of Delegates in February, sentiment was expressed for the State Society and/or the American Medical Association to conduct an all-out public information program, even if it means a special assessment of all physicians in order to accomplish it. The Board of Trustees prefers not to make a definite recommendation as to the desirability of this public information program, but rather to leave it to the discretion of the House of Delegates to make this decision. However, in line with this proposal, the following information would seem to be appropriate:

In a recent issue of the WASHINGTON REPORT ON THE MEDICAL SCIENCES, there was a quotation taken from a speech presented by Harry J. Loynd, president of Parke, Davis and Company, who appeared before the Michigan Clinical Institute in Detroit. In his speech he made the point that the superiority of medical practice in the American tradition, over that which would exist in a welfare state, is as *real* as this fact is *unappreciated* by the public. He appealed for renewed effort to "sell" successfully the case for voluntary health services. The following is a direct quotation from his address: "If we are to avoid further Federal legislation, spurred by public misunderstanding, the health team must explore all avenues and join together to support a mutually beneficial program of public information and communication, based on nothing but

facts; in short, a good sound public relations program." Mr. Loynd described medical care today as the "biggest service and commodity bargain that any person will ever buy in their entire lifetime." In conclusion, he said, "Attainment of the most effective public relations is essential if we are to keep medicine in the hands of the medical practitioner and not hand it, by default, to some government agency or bureau."

At the Annual Meeting last year, the House of Delegates requested the Board of Trustees to undertake a study of ISMS representation to the AMA meeting, especially insofar as alternate delegates are concerned. A subcommittee of the Board of Trustees has spent a great deal of time on this matter during the past year, and has developed the following recommendations:

- (1) That there be one regularly elected alternate delegate of the ISMS.
 - (2) That in order that this officer be fully informed of the policies and official actions of the ISMS that he be made a member of the Executive Council with all privileges and duties thereof.
 - (3) That the alternate delegate attend all conventions of the House of Delegates of the AMA with expenses paid, to which regular delegates are sent.
 - (4) That in the event of the absence of a regular delegate from a convention of the House of Delegates of the AMA, that the alternate delegate assume all the responsibility and duties of the office of delegate at this convention.
 - (5) That in event two or more regular delegates be unable to attend a convention of the House of Delegates of the AMA that the president of the ISMS be authorized to appoint from the Executive Council the necessary additional number of members to attend as delegates of the Society, thus assuring informed representation.
 - (6) That in event of the absence of the alternate delegate from a convention of the House of Delegates of the AMA that the president of the ISMS be instructed to appoint from the Executive Council a member to act as alternate delegate at this convention.
- To effect these recommendations, the following amendments to the Articles of Incorporation and By-Laws are proposed by resolution. It reads:

RESOLUTION

Resolved, that Article IV, Section 2, of the Articles of Incorporation of Iowa State Medical Society as amended, be amended by striking therefrom the fifth complete sentence thereof and adding in lieu thereof the following two sentences: "The delegates to the American Medical Association shall be elected in such numbers and for such terms as the By-Laws of the American Medical Association may prescribe. Alternate delegates to the American Medical Association shall be elected in such numbers and for such terms as the By-Laws of the Society may prescribe."

Resolved, that Article IV, Section 16, of the Articles of Incorporation of Iowa State Medical Society as amended, be amended by inserting therein after the first complete sentence thereof the following: "Effective January 1, 1962, the alternate delegate to the American Medical Association shall be a member of the Executive Council."

Resolved, that Chapter III, Section 6, of the By-Laws of Iowa State Medical Society as amended be amended by striking therefrom the whole of said Section 6 and substituting in lieu thereof the following: "It shall elect delegates to the House of Delegates of the American Medical Association in such numbers and for such terms as the Articles of Incorporation and By-Laws of the American Medical Association may provide."

"At the annual meeting of the Society in 1960, it shall elect two alternate delegates to the House of Delegates of the American Medical Association, whose terms shall expire on January 1, 1962. At the annual meeting of the Society in 1961, and each two years thereafter, it shall elect one alternate delegate to the House of Delegates of the American Medical Association who shall serve as alternate for each delegate."

Resolved, that Article IV, Section 8, of the Articles of Incorporation of Iowa State Medical Society as amended be amended by adding thereto the following: "Effective January 1, 1962, he shall in the event one or more of the regular delegates and the alternate delegate to the House of Delegates of the American Medical Association are unable or unwilling to attend a meeting of such House of Delegates, appoint a suitable member of the Executive Council to serve as alternate delegate at such particular meeting."

The Board of Trustees respectfully submits this supplemental report to the House of Delegates for its consideration.

G. H. SCANLON, M.D., *Chairman*

At the conclusion of his report as chairman of the Board of Trustees, Dr. Scanlon provided a brief summary on the financial status of the ISMS Educational Loan Fund. He reported loans outstanding as of April 15, 1959, totaling \$110,702.72, and loans repaid as of April 17, 1959, totaling \$8,060.49.

Dr. Scanlon also introduced two junior students from the College of Medicine at Iowa City who were in attendance at the annual meeting as guests of the ISMS. One of the students was extended the privilege of the floor to comment on the help which the Educational Loan Fund has provided to students who have borrowed from it.

Supplemental Reports of Standing Committees

COMMITTEE ON LEGISLATION

(Referred to the Reference Committee on Legislation and Public Relations. For final action by the House of Delegates, see the report of the reference committee.)

Since Congress is almost constantly in session and since it is now just a few days prior to the usual adjournment of the Iowa General Assembly, this cannot be a comprehensive, final summary. For convenience this supplemental report is divided into three sections as follows:

NATIONAL LEGISLATION

Forand Bill (H.R. 4700). We can expect hearings to be conducted across the nation by a subcommittee of the Congress on the subject of health care for the aged and others of modest means and an investigation into the costs of medical care in general. We are hopeful the Forand Bill will not be reported out of the House Ways and Means Committee this year. However, the stage is set for the real "push" in 1960, a presidential election year. It must be kept in mind that the Social Security Act is seldom left intact in an election year.

This bill would provide "free" hospitalization, nursing home care and surgical benefits for over 13,000,000 recipients of Social Security aged 65 or over at an initial cost of about \$2 billion a year. Those who have been deluded into thinking that this bill is "merely for the aged" have not read the testimony of Mr. Forand, himself, before the House Ways and Means Committee on June 16, 1958, to wit: "The fact is that the ultra poor, if I may put it that way, the indigents and the wealthy are able to provide themselves with those services (hospitalization and surgical care) because charity takes care of the indigents and the wealthy are able to pay for it. It is that middle income group,

that in-between group that is suffering and in many instances have to postpone hospitalization or surgical treatment. I have voluminous files. . . ."

If the Forand Bill should pass, the next step is to extend it to the 80,000,000 persons of all ages under Social Security, and the last and FINAL step is to extend it to the "have nots," or the rest of the entire population.

Thus, all the stops will be pulled out in 1960; the battle lines have not only been drawn but the battle has begun and time is of the essence. Although some physicians may feel the battle is already lost with too little ammunition being delivered too late, the majority feel they must continue fighting this political menace rather than surrender the time-proven private practice of medicine which has shown such great benefit to their patients.

Only one course of action is deserving of the necessary public support to prevent powerful pressure groups and certain elements of Congress from passing the bill in 1960: Organized medicine in conjunction and cooperation with hospital groups, Blue Cross and Blue Shield, commercial insurance companies and many others, must continue to offer proof positive that it is willing, ready and able to provide and/or support improved methods of financing health care for the people of this nation on a voluntary basis within their ability to pay. Any other approach not having the public interest in mind invites public condemnation and subsequent elimination of the private practice of medicine within the very near future.

Social Security. Undoubtedly many of the 400 bills relating to Social Security which were introduced in the 85th session of Congress will be reintroduced during this session. The medical profession is concerned, as others well might be, as to expanding programs of this type.

Doctor Draft Extension. Predictions that the Congress would pass a four-year extension of the Doctor Draft Law have proved to be correct. The bill states that M.D.'s who have received educational deferments are subject to call to their 35th birthday; other registrants are free of obligations at age 26. Medical officers will receive an extra \$100 to \$250 a month incentive compensation based on years of active duty.

Medicare. The Navy has requested and obtained an additional \$4,243,000 to cover the cost of the civilian portion of the Medicare program. The House Appropriations Committee in voting the money stated "The Committee believes that little or no efforts have been made to obtain reasonable rates for fees and expenses." Funds for the over-all Medicare program for the next fiscal year will be considered at a later date.

Nursing Home Loan Guarantees. The Senate has passed this bill, but it has not received approval of the House at the time of this writing.

Keogh Pension Bill. This bill has now passed the House and has been sent to the Senate Finance Committee where it is receiving some considerable opposition from the Treasury Department and others who fear, unreasonably we feel, a considerable loss of revenue. Your Committee on Legislation has been working hard to obtain passage of this bill in cooperation with the AMA Committee on Legislation and the American Thrift Assembly. Your Committee is still hopeful that this just legislation, permitting the self-employed to place 10 per cent of their annual income or \$2,500, whichever is the lesser, in retirement funds

with a maximum lifetime limit of \$50,000, will be enacted thus eliminating unfair tax discrimination for the self-employed.

Compulsory Health Insurance. During the latter part of February Senator Murray and Representative John Dingell introduced their newest version of a very nearly perennial compulsory national health insurance (S.F. 1056 and H.F. 4498). It is well known that this direct approach to outright compulsory health insurance is not nearly so dangerous as the camouflaged approach inherent in the Forand Bill.

STATE ISSUES

The 58th General Assembly appears to be setting a new record for introduction of legislation directly or indirectly affecting the practice of medicine. Two hundred eleven bills, or over 16 per cent of the total 1,278 introduced at this writing, have had to do with health needs. Foremost among them are the following:

(1) *Medical Examiner Bill* (H.F. 260 and its companion bill, S.F. 247). Your Committee is pleased to report that at this writing the county medical examiner bill has passed both chambers by a large majority vote in each instance and is at this writing awaiting the Governor's signature into law. This bill greatly modernizes the present archaic coroner "system" at the county level in that briefly, the new law makes it mandatory for the county medical examiner to be a physician, gives him more clear-cut assistance, financially and professionally speaking, to make solely medical determinations and frees him of quasi-judicial and law enforcement duties as well as eliminating the coroner as an elective office.

The new county medical examiner system will become effective January 1, 1961, after terms of office of the present coroners expire. We are happy that this legislation passed with unusual swiftness, considering it was recommended only last year by the House of Delegates.

(2) *Reorganization of State Board of Health* (S.F. 335). Although many physicians feel that the present Board of Health with a membership of five doctors of medicine is entirely satisfactory, the ISMS supported this bill strongly. The bill would have expanded the Board of Health to twelve members including four M.D.'s, the Commissioner of Public Health, who would be a non-voting ex officio member of the Board and also an M.D., one osteopath, one dentist, one pharmacist, one registered nurse, one veterinarian, one hospital administrator and a sanitary engineer. The bill provided the Board of Health be a policy making board relative to any duty imposed upon the Department of Health by law and also provided that the Commissioner would be appointed by the Board with the consent of the Senate.

The Board of Health Bill, drafted by the "Little Hoover Commission," was supported in its original form by the ISMS and other members of the Iowa Interprofessional Association. When it became apparent that a chiropractic amendment had some chance of success, the Legislative Committee was faced with the choice of accepting such an amendment in order to obtain easy passage of this measure or resisting it with the assumption of the calculated risk involved. The Committee determined on a policy of resistance to the chiropractic amendment, which policy was also adopted by the Interprofessional Association. After sharp debate in the Senate, the chiropractic amendment pre-

vailed by a vote of 23 to 19. The attitude of those voting for the amendment was essentially that of giving recognition to a group required to pass the basic science examination. Opponents of the amendment argued that the only justification for it was that "recognition," and contended that its passage would prompt other groups, such as the optometrists and chiropractists, also to seek membership on the Board. They also argued that chiropractors were not qualified to contribute to the actual work of the Department of Health.

The ISMS and IIA have withdrawn support of this bill which is still in the House Sifting Committee.

(3) *Bills to Redefine Optometry* (S.F. 28 and companion bill, H.F. 25). The Society, after receiving close cooperation from the Iowa Academy of Ophthalmology, was successful in amending these bills which were passed and signed into law just recently so as to prevent them from broadening the scope of optometry and permitting optometrists to use diagnostic and therapeutic procedures reserved to doctors of medicine or technicians under their direct supervision. Another optometry bill (H.F. 113 and S.F. 161), was extremely objectionable and would have set up an independent board of optometry examiners as well as expanded the practice of optometry broadly into the practice of medicine. These bills, which were not officially supported by the optometry association, are not on either chamber's calendar at the present time and are not likely to pass in their present form.

(4) *Mental Health Proposals*. It appears quite likely that all 14 Mental Health bills as supported by the Mental Health Committee of the ISMS, Mental Health Association and others, will be passed during this legislature. All but two of these bills have now either been passed or will be up for passage before the legislature adjourns. The four main bills are as follows:

(1) An act to provide for a director of mental health and to specify his duties; (2) An act to exempt employees of the Board of Control or in institutions under the Board of Control from the jurisdiction of the division of personnel; (3) An act relating to the appointment, removal and responsibility of executive officers of institutions under the jurisdiction of the Board of Control; and (4) An act to strike certain objectionable terms from the several chapters of the Code relating to mental illness and to substitute modern terminology therefor.

(5) *Hospital Proposals*. (S.F. 118, 119 and 40 and companion bills, H.F. 212, 211 and 88). These bills have now been passed. They raised to \$500,000 the present \$200,000 maximum for bond issues to establish a county hospital, permit a municipal hospital to become a county hospital, or vice versa, and permit mill levies for additional construction of county hospitals to be raised depending on county population.

(6) *Civil Defense Bills* (S.F. 166). This was the major civil defense bill and now has been passed. It creates a civil defense administration for the state of Iowa and in effect is an act to clarify the somewhat nebulous legal existence of the present civil defense administration, which has been operating under the supposition that a state of war with Germany still officially exists. Several other civil defense bills providing for emergency temporary relocation of the site of state and local governments were also enacted as well as provision for emergency successors to state and local officers.

(7) *Automotive Safety*. Bills supported by the Automotive Safety Committee of the ISMS to make mandatory the suspension of driver's licenses for refusal to take blood tests for OMVI and other legislation having to do with driver's education courses have not received final action at this writing.

(8) *Notice to Depart Legislation* (S.F. 34 and H.F. 103). With support from ISMS and other groups, the section of the Iowa Code dealing with legal residence was amended to repeal the notice to depart provision and to provide that any person residing in state one year shall acquire a residence in whatever county he lives.

(9) *Salaries*. The ISMS is supporting salary increases for the Commissioner of Health and the State Medical Librarian. At this writing no final decisions have been reached, but it now appears that Dr. Zimmerer will receive an increase of \$1,100 and Dr. Dean-Throckmorton an increase of at least \$900.

Other Bills of Importance. (a) H.F. 111, having to do with fluoridation and discontinuance of fluoridation if 20 per cent of the voters sign the petition, has passed the House but not the Senate at this late date. (b) S.F. 44, making federal funds available to the State Social Welfare Department for aid to disabled between ages 19 and 65, has not passed and is not likely to pass this session. The ISMS is concerned about expanding programs of this type in determination of disability. (c) *Workmen's Compensation Laws*. There are several bills relating to workmen's compensation and unemployment compensation which have some medical aspects. The most significant of these, H.F. 690, was amended on April 14 to reverse the present law which permits the employer to designate the physician to treat an injured employee. This amendment gave "free choice of physician" to the employee even though the employer is required to pay the medical expense. It also provides that the Industrial Commissioner could determine whether or not a physician was qualified to render medical care in a given case. On April 16, the amendment was reconsidered by the House and defeated. The Legislative Committee feels that there is merit in attempting to preserve "free choice" to the employee but that the amendment itself raised more problems than it solved. It is recommended that this entire area be thoroughly considered by the Industrial Health Committee and the Committee on Legislation, that meetings be held with representatives of employers, employees and the Industrial Commissioner's office, and that voluntary solutions to the problems involved be sought. Should study show that legislation is needed, it should be carefully drafted and supported in the 59th General Assembly. (d) H.J.R. 3. Among other bills having to do with social welfare, the ISMS has looked with favor upon this legislation which creates a joint ten-member legislative committee to study public assistance in Iowa and to make a report to the 59th General Assembly. We hope to be able to work with the legislative committee so as to better understand and help formulate policy on medical aspects of public assistance.

ACTION ON OTHER MATTERS

Vendor Payment Program. Following the special ISMS House of Delegates meeting, February 22, and in accordance with its actions, the ISMS asked your Committee and its legal counsel to seek ways and means of negotiating a system whereby (1) the pro-

gram shall be conducted in a manner which insures the maximum possible of local control, or (2) the vendor payment funds could be allocated to private voluntary health insurance system for coverage of those individuals involved.

Your Committee has found, in brief, that under the federal law a single state agency must still retain supervisory authority even though the ISMS were to be successful in amending the several sections of the Iowa Code to give political subdivisions "administrative duties" as permitted by the federal law. The present Iowa program provides for near autonomy by the county boards of social welfare in that the county boards, not the state boards, determine eligibility for care, audit bills, pass on any irregularities, and so on. It would appear that under the federal law the change to county "administration" would not solve the complexities involved and might possibly result in increasing those complexities without decreasing federal participation, monetary and otherwise. The matter of seeking possible changes in the Iowa enabling act was considered at this late date in the legislative session and indications were that any such attempts would be futile at the present time.

It appears that the federal law as amended in 1958 does provide for the possibility for expenditures for insurance premiums for medical or other type of remedial care under the vendor payment program. Following the meeting of the 1959 House of Delegates, the Legislative Committee expects to continue exploration of this subject with the Social Welfare Department, Blue Shield and commercial insurance companies.

Annual Washington, D. C. Trip. According to comments from the Congressmen and their secretaries, as well as representatives of the AMA who were present, the Annual Luncheon of the ISMS Delegation with the Congressmen was the most successful meeting ever held. All but two of the entire ten-member Iowa Congressional Delegation were present and the Congressmen seemed sincerely impressed with the way the medical profession of Iowa had taken a positive approach in answer to the Forand Bill and other legislative problems. This meeting, which was held March 2, was attended by nearly 30 persons. A full report was given to the Congressmen on the interests of Iowa doctors as to the Keogh Bill, Medicare, extension of the Doctor Draft Law, and other matters. The Congressmen were also informed on the status of legislation in the state of Iowa in which Iowa doctors were interested. We were given every reason to believe that the meeting was successful in enlisting the support of every Congressman present with respect to the position of the ISMS on national legislation. It should also be mentioned that prior to the luncheon meeting, the ISMS Delegation held a breakfast conference with members of the AMA Washington Office which brought to us much information concerning various political activities on national health legislation.

Cancer as a Legally Reportable Disease. Readers of this report will remember that the 1958 House of Delegates advised for the moment against making cancer a legally reportable disease, instead recommending voluntary reporting of cancer through a central registry for scientific purposes. Your Committee is pleased to report that in cooperation with the Iowa Chapter of the American Cancer Society a joint committee of representatives of the ISMS and the Iowa Chapter has been formed to explore all of the ramifications of

this subject, including financial support and other problems. This committee has already met twice and it is hoped that by further exploration of the subject that a solution satisfactory to all concerned will be found.

Iowa Joint Council for Care of the Aged. As approved by the 1958 House of Delegates, your Committee has been active in cooperation with other committees of the Society in attempting to adopt a positive program of research and study of the methods of providing medical care for the aged. Along this line an Iowa Joint Council for Care of the Aged was set up as described on page 48 of your Handbook.

SPECIAL NOTE

Re County Medical Examiner Bill: This new law provides that the examiner shall be either a doctor of medicine or an osteopath who shall be appointed by the county board of supervisors from names submitted by the respective organizations. Both the ISMS and IOA found it necessary to make pledges that they would encourage submission of these names so as to avoid vacancies. It is the hope of your Committee that every county medical society will fulfill this pledge.

CONCLUSION

I wish again to commend my fellow members of the Committee on Legislation, our legal counsel and staff members, but particularly the legislative contact men and many other physicians without whose support the above report in its entirety would not have been possible.

NOBLE W. IRVING, M.D., *Chairman*

COMMITTEE ON ARTICLES OF INCORPORATION AND BY-LAWS

(Referred to the Reference Committee on Articles of Incorporation and By-Laws for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

The Committee on Articles of Incorporation and By-Laws met during March, at which time it approved the following amendments to the Articles of Incorporation of the Iowa State Medical Society:

Resolved, That Article III, Section 3, of the Articles of Incorporation of Iowa State Medical Society as amended be amended by striking therefrom the last sentence and substituting in lieu thereof the following:

"Life Members shall be accorded all the privileges of Active Members but shall be exempt from the payment of dues beginning January 1 following their election to Life Membership."

Resolved, That Article III, Section 4, of the Articles of Incorporation of Iowa State Medical Society be amended by striking therefrom the second sentence and substituting in lieu thereof the following:

"Associate Members shall be exempt from the payment of dues as recommended by the Judicial Council in each individual case, but shall receive the publications of the State Society."

Resolved, That Article IV, Section 1, of the Articles of Incorporation of Iowa State Medical Society as amended be amended by striking therefrom the fifth complete sentence thereof and substituting the following:

"The officers of the Society as defined in these Articles and the past presidents of the Society for the immediate five previous years shall be, ex officio, members of the House of Delegates without the right to vote unless that officer or past president be at the same time a duly elected delegate."

The amendments referring to dues of Life and Associate Members were requested by the Board of Trustees and Judicial Council in order to clarify the dues requirements of these physicians in the year they are elected to these membership classifications.

The recommendation that past presidents of the Iowa State Medical Society be designated as ex officio members of the House of Delegates without voting privileges is based on the logic that recent past presidents in many instances possess background information that might be extremely important to the House of Delegates in its deliberations. It was the consensus of the Committee that these past presidents should feel free to speak as members of the House of Delegates without being required to obtain special permission.

P. F. CHESTNUT, M.D., *Chairman*

SUBCOMMITTEE ON HOSPITAL AND PROFESSIONAL RELATIONS

The Subcommittee on Hospital and Professional Relations did not present a supplemental report. However the chairman of the Committee, Dr. W. L. Downing, requested the privilege of the floor in order for Mr. R. B. Throckmorton, legal counsel for the ISMS, to present a brief report.

MR. ROBERT B. THROCKMORTON: Mr. Speaker, Dr. Abbott, and Gentlemen: The hospital-doctor controversy has moved to Wisconsin. The situation in Iowa has worked out very well in these past two years, as I think most of you know from experiences in your own communities.

The hospitals have raised this issue in Wisconsin, and they have profited from the mistakes they made in Iowa. We learned this from a meeting ten days ago with Dr. Hildebrand, president of the Wisconsin Medical Society, Dr. Beatty, the president of their radiologist group, and their very able counsel, Robert Murphy.

The hospital group in Wisconsin has launched what seems to me to be rather a "Pearl Harbor" type attack in the Legislature. They have submitted two bills. One is known as 129-A which would permit hospitals expressly "to engage anesthesiologists"—note the term "engage"—"pathologists, psychiatrists and radiologists on a contractual basis, and charge the patient directly for services rendered by such persons."

Also "Such hospitals may charge patients directly for the services of their employees, including that of nurses, anesthetists and medical assistants."

I think you can readily see, without really having a chance to study the language, that this law would expressly nail down the hospital position that failed in Iowa. By permitting hospitals to charge directly for the services of employees, Mr. Murphy feels that the term "employee" could apply to not only the four specialties enumerated, where the term "engaged" is used, which would imply employment, but would authorize the employment of any physician.

The other bill, 485-A, pertains to the Blue Shield Enabling Act in Wisconsin and merely adds a simple additional sentence: "Such plan or plans shall not embrace hospital services." Under the Wisconsin law, the Blue Shield there or any plan that the Medical Society comes up with may provide hospital as well as medical services now, but this may make it clear that the Medical Society could not provide hospital services. And when these two bills are read together, they have already taken the four specialties and defined them as being hospital services, and there is no further definition. So, almost anything that the hospitals decided to define as a hospital service could be

taken away from Blue Shield and given to Blue Cross.

Now, the story that these gentlemen told us struck a very familiar note. They have had the usual numerous unsuccessful conferences. There have been press releases and editorials. There have been charges of bad faith, and the hospital trustees are being indoctrinated much as they were in Iowa.

The principal argument advanced by the hospital group is that they are merely trying to legalize what has been going on for years. These bills were filed rather late. Well, this one was filed March 18 and the other February 10, but knowledge that they were being considered was not available to the Medical Society more than a few months back. The essence of the issue was made clear by this report. It is called "The Blue Cross and Blue Shield in Wisconsin—Report by the Wisconsin Insurance Department." This Commissioner did not interview doctors; he did ask the Society for some written material. We were much impressed that the Insurance Commissioner, in preparing his report, went right to the essence of the matter, and he states it here: "The main issue is the question of who is going to control the practice of medicine, the physicians or the hospitals."

The legislative position of the Wisconsin Society is not good. Mr. Murphy told us that the Legislature now has 55 Democrats in the House and 45 Republicans. He feels, by and large, the Democrats are sympathetic to the hospital position, and that there are quite a few Republicans that likewise are sympathetic with the hospital position.

In the Senate there is a Republican majority—20 Republicans, as opposed to 13 Democrats. The Speaker of the House is a representative who for ten years has been very bitter against medicine. He was elected Speaker on the support of many of the newly elected representatives. He promptly named them as committee chairmen. And his feeling against medicine is such that, whenever a bill comes up that involves organized medicine, he vacates the chair and goes down to his desk in order to speak personally against the bill in vitriolic terms.

There is a new type of legislator. Some of these are men who have been on relief and live in shacks out on lows that have been on relief, live in shacks out on the edge of town. The Medical Society has no contact with them, and has not developed any real way effectively to communicate with them. These fellows have a chip on their shoulders. They are for the underdog. There is an effort in the Legislature at tearing down anyone who has anything. It is a tough session for the lawyers. The bar association is being investigated. It is a tough session for the doctors. It is kind of an open field day for the chiropractors, the optometrists, the chiropodists—all the groups that have been waiting to get medicine on the run.

Committee hearings have been held on the two bills. They will be reported out probably favorably. They have a long session in Wisconsin. It will probably recess and convene again in the fall, and perhaps be carried over into next year, in order to keep the pot boiling for the elections of 1960.

They have no sifting committee, such as we have. Under their rules, every bill that is reported out of committee must be acted on.

I should like a few minutes more to dwell just a little bit on the lessons to Iowa, as I see them. It is obvious, if hospital legislation is successful in Wisconsin,

sin, that it is only a matter of time when we will have to face this fight in the Iowa Legislature, in my opinion. I also think that the trend in Wisconsin is something we can anticipate here. I think we are lucky that we have time to prepare for it.

Our legislative position at the present time I would say is favorable in these respects: Since I have represented you "on the hill" we have had three sessions that I believe the Legislative Committee feels have been highly successful. We have had greater interest than ever before and a better organization than ever before with the legislative contact men. Adding Mr. Buckles and Mr. Serrill "on the hill" has meant a great deal to our program this year. We have received compliments from legislators.

I think the Medical Society has a reputation for integrity and for attempting to serve the public interest. Increasingly, legislators come and ask our advice on medical matters.

However, there are some unfavorable developments that I think I must tell you about. We, too, have some of those legislators that I would class as the iconoclast type, regardless of party. There are some legislators that have a chip on their shoulders against medicine and what it stands for.

We also, more seriously, have some legislators that are cooling off, I would say. I think I can illustrate by saying that as long as Lonnie Coffin is down in Van Buren County, we will always have favorable representation from Van Buren County. However, will we have that when such time comes as Dr. Coffin is not practicing there? I just raise this question, because we have two or three counties already where, because we have had a man like Dr. Coffin, or several men like that, we have had excellent contacts. But since those men have gone on, I am not sure that their young successors are able to maintain the same esteem and same contacts. I do know that some of these legislators that have been very devoted to us in the past have tended to cool off a little bit as these necessary changes come.

There are only two things we can do about this. One is to develop better contacts with our legislators, and this will be discussed at the legislative contact men's breakfast tomorrow. The other one is to obtain public support for our position.

I think the true lesson in Wisconsin is again stated in this handbook, in their conclusions: "The commissioner says certainly every effort should be made, and made immediately, to resolve the issue of who is going to control the practice of medicine, the physician or the hospitals. It should be decided in favor of what is in the best interest of the consumer, the subscriber or the patient, not the doctors or the hospitals."

This, to me, is the true basic issue that we face in Iowa, as well as elsewhere. Can we convince the public that it is to the best interest of the patients that doctors of medicine continue to control the practice of medicine?

Then I set forth very briefly my hypothesis which has been based on almost 365 days in the Legislature in the last four years. As you know, I serve as sort of a buffer between you gentlemen and the 158 legislators "on the hill." This is a job that I prize. I have never had a client I enjoyed representing as much, and yet I do get caught in the middle, and I get complaints as well as praise. I do not always have a chance to bring them back home, or it may be after the session is over,

when they are not quite so clearly impressed on your minds. May I speak very briefly as to this hypothesis that seems right to me, which is that we have been treating the symptoms and not the disease. The symptoms we have been treating lately, it has seemed to me, have been thrust upon us, such things as Vendor Payment Program, the Medicare Program, Blue Shield, hospital controversy, the Forand Bill and Closed Panel Plans. The types of treatment we have used have been arguments about the free choice of physician, the corporate practice of medicine, fee-splitting, the fee-for-service principle, third parties, and the overall blanket term "socialized medicine." The real disease, it seems to me, is where we are failing to place the patient's welfare first. The real symptoms that the public sees—I don't claim these are true or untrue, but this is what the public sees in all too many instances: they see much impersonal treatment; that patients are cases, not human beings. They see that patients have to wait long hours in doctors' reception rooms. They see and complain about the fact that doctors do not make house calls; that they do not make night calls. They complain about being shifted from one specialist to another, without knowing how long it is going to last, and so forth. They complain a little bit about malpractice, as to whether doctors are exceeding their qualifications, whether they are not sticking together too much to protect themselves, and not the patients. They complain about overcharging, not necessarily because their own bill is too high, but they look around and they are envious of the doctor's car, his home, and the vacations he is able to take. They assume he is making too much money, and he must be overcharging to do it.

They complain because there is no longer a doctor in their community and, therefore, they have to put up with an osteopath or even a chiropractor. They kind of wonder about our opposition to certain programs, whether it is based on our own interest or on their interest: such programs as the disability program, the Forand Bill, more acutely, the polio vaccine program, which is no longer an issue.

Lastly, they ask why doctors do not participate more in community affairs. These are ugly symptoms. Maybe they are better not brought before you, but I feel that I would be unfair not to lay it on the line that these symptoms, in the minds of some legislators and their constituents, do exist. My feeling is that this is the real disease and that these are the real symptoms that ought to be treated. It is not up to me to treat them; it is up to you. It is obvious that some of the symptoms merely need to be explained, and that they do not need to be treated, but there are many of them that do need actual treatment.

I think, particularly on the question of whether we have enough doctors, you see, most of the things relate to the fact that the doctor is so busy, the public is beginning to think, "Well, if the doctor is so busy, I can understand that, but shouldn't we then have a few more doctors?" As President Abbott pointed out, steps are being taken by the Society to study this question.

If this diagnosis is correct, it seems to me we will maintain and deserve public support of medical leadership only if every doctor individually, and every county society and the Iowa State Medical Society will make the treatment of these symptoms the first order of business. I do not think we can permit our-

selves to lose sight of the forest because we have been confronted with all these trees about Blue Shield, the hospital controversy, Medicare, and so on. But unless we can actually get down to the essence of your treatment of the individual patient and show that we are sincerely interested and that we are doing something about it, whether I represent you or somebody else does "over on the hill," whether we have these iconoclastic legislators or whether we don't, our position over the period of time will necessarily weaken.

If you gentlemen will give serious consideration to this very basic problem of placing the welfare of the patient first, and making that the focal point of every program you undertake, I predict a bright future and one of which we can be proud.

Thank you. (Applause)

COMMITTEE ON MEDICAL EDUCATION
AND HOSPITALS

In the absence of the chairman, Dr. L. F. Hill, Dean Norman B. Nelson gave the following report for the Committee on Medical Education and Hospitals, of which he is a member, and for the SUI College of Medicine.

(Referred to the Reference Committee on Miscellaneous Business for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

THE PROBLEM OF ADEQUATE MEDICAL CARE IN IOWA

Colleges of medicine and the medical profession of this country are jointly and falsely accused, from time to time, of suppressing the production of doctors. It is important therefore that we consider the facts as they pertain to Iowa.

All of the studies indicate that the problem of adequate medical care in Iowa is more of a problem of distribution of doctors, than of an insufficient total number of doctors. Certain more heavily populated countries have a high doctor-patient proportion, whereas other less populous countries have a far lower doctor-patient relationship. For instance, Cerro Gordo County has one doctor for 648 people; Black Hawk County one doctor for 844 people; Linn County one doctor for 847 people; Wapello County one doctor for 894 people; and Polk County one doctor for 717 people. On the other hand, Adair County has one doctor for 2,048 people; Adams County one doctor for 2,188 people; Allamakee County one doctor for 2,335 people; and Taylor County one doctor for 4,140 people.

TABLE 1
DOCTOR-POPULATION RATIOS FOR SELECTED
IOWA COUNTIES, 1958*

County	Number of Persons Per M.D.
A. Cerro Gordo	648
Black Hawk	844
Linn	847
Wapello	894
Polk	717
B. Adair	2,048
Adams	2,188
Allamakee	2,335
Taylor (lowest)	4,140

* From a study by Edw. W. Hamilton, of the ISMS staff. These figures are based upon the 1958 distribution of physicians, but on the 1950 census of the general population.

ple; and Allamakee County one doctor for 2,335 people. Taylor County has the lowest doctor-population ratio in the state: one for 4,140 people.

A thorough study of the production of doctors by the State University of Iowa indicates that the State of Iowa is providing education for significantly more medical students per population than is the United States as a whole. It has 5.7 entering medical students per 100,000 population as contrasted to the United States average of 4.7 per 100,000 population. Iowa as a state is tenth highest in the United States in the number of students entering medical school. It exceeds all of the surrounding midwest states except Nebraska.

TABLE 2
RATIOS OF FIRST-YEAR MEDICAL STUDENTS
TO STATE POPULATIONS *

U.S. Average	4.7/100,000	Iowa	5.7/100,000
Other States (Iowa is 10th highest)			
Kansas	.....	5.5/100,000	
Colorado	.....	5.1/100,000	
Minnesota	.....	4.9/100,000	
Ohio	.....	4.6/100,000	
Wisconsin	.....	4.3/100,000	
Illinois	.....	4.2/100,000	
Missouri	.....	3.4/100,000	
California	.....	3.4/100,000	
Nebraska (Country's highest)	.....	7.1/100,000	

* From a report published in J.A.M.A.

A study of the doctor population statistics in Nebraska indicates that although it produces more doctors per population than any state in the country (population 1,452,000; Creighton and Nebraska Medical Schools), outside of the Omaha area it has no more doctors per population than does Iowa

TABLE 3
DOCTOR POPULATION, IOWA VS. NEBRASKA

	Iowa	Nebraska
Doctors	2,715	1,515
Population	2,799,000	1,452,000
Doctor/Population	1/1,030	1/960
Des Moines Omaha		
Doctors	326	581
Population	178,000	251,000
Doctor/Population Ratio Outside Two Large Cities		
	Iowa	Nebraska
	1/1,100	1/1,280
(plus Johnson County)	1/1,150	

Evidence indicates that the greater the production of doctors that occurs in a state, the smaller the per cent of these doctors who remain in the state. It is for this reason that, for instance, Nebraska with 7.1 entering students per 100,000 population shows 31 per cent of its alumni remaining in Nebraska, whereas Wisconsin with 4.3 entering students per 100,000 population shows 46 per cent remaining in the state. Dean Tollman of the University of Nebraska states that he has requests

TABLE 4
M.D.'s PRACTICING IN THE STATES WHERE THEY
ATTENDED MEDICAL SCHOOL *

State	Percentage of alumni lo- cated in the same state as medical students to the medical school from population which they graduated	Ratio of first-year medical students to population
Nebraska	31	7.1/100,000
Kansas	39	5.5/100,000
Iowa	43.4	5.7/100,000
Michigan	45.1	
Wisconsin	46	4.3/100,000
Illinois	51	4.2/100,000

(Of 84 colleges of medicine, Iowa's stands 44th in the percentage of its graduates in the same state.)

* J.A.M.A., February 11, 1956, p. 473.

TABLE 5
IOWA'S PHYSICIAN BALANCE SHEET, 1950*

Living physicians trained in Iowa	2,574
Number of those physicians who stayed in Iowa	1,116
Number who came to Iowa from other states ..	1,202
	2,318
Net LOSS	256

* Dickinson, Bulletin No. 101.

TABLE 6
THE ILLINOIS PHYSICIAN BALANCE SHEET, 1950

Living physicians trained in Illinois	13,745
Number of those who stayed in Illinois	6,019
Number who came to Illinois from other states	2,804
	8,823
Net LOSS	4,922

from 70 communities in Nebraska who want doctors. Iowa with 5.7 entering students per 100,000 population shows 43.4 per cent of its alumni locating in the state.

As of 1950, there were 2,574 living physicians trained in Iowa. Of these, 1,458 were practicing in a state other than Iowa, and 1,116 in Iowa. At that time there were 1,202 practicing in Iowa, but trained in other states. This amounts to a net loss to the state of 246 living physicians. During the same year (1950) there were 13,745 living physicians trained in Illinois. Of these, 6,019 remained in Illinois and 7,726 went to other states. There were 2,804 who had come to Illinois from other states. This represents a net loss to Illinois of 4,922 living physicians. States without or with insufficient medical colleges had a gain in living physicians over those trained in the state, i.e., New Jersey had a gain of 5,312 living physicians; Connecticut, 1,408; Maine, 644; New Hampshire, 581; California, 8,204 and Florida, 273. These states have been taking advantage of the taxpayers of other states. Fortunately, they are beginning to acknowledge their responsibility. New colleges of medicine have been started now in New Jersey (Seton Hall), California (U.C.L.A.), and Florida (Miami and U. of Florida). It is obvious that the federal government should assume some responsibility. This has been done in research, but any action in medical education has been stalled by the segregation problem.

TABLE 7
STATES TAKING ADVANTAGE OF TAXPAYERS
ELSEWHERE, 1950

	Excess of Physicians in Practice Over the Number Who Had Been Trained in the State
New Jersey	5,312
Connecticut	1,408
Maine	644
New Hampshire	581
California	8,204
Florida	2,731

TABLE 8
NUMBER OF STUDENTS ENTERING STATE MEDICAL
SCHOOLS IN RELATION TO POPULATION, 1956-1957

State	Population	Number in Entering Class	Population per Entering Student
Nebraska	1,366,000	85	16,000
Iowa	2,685,000	120	22,000
Minnesota	3,132,000	130	24,000
Wisconsin	3,628,000	84	43,000
Illinois	9,193,000	190	48,000
Missouri	4,076,000	75	54,000

TABLE 9
RATIOS OF APPLICANTS TO ACCEPTANCES IN MEDICAL
COLLEGES IN BORDERING STATES, 1956-1957

State	Number of Applicants	Number Accepted	Per Cent Accepted
Nebraska	210	85	40.5
Iowa	191	120	62.8
Minnesota	300	130	43.3
Wisconsin	244	84	34.8
Illinois	660	190	28.8
Missouri	178	75	42.1

(If we were to lower our standards any more, we would not only lose our faculty, who would go to schools with higher standards, but good students would no longer want to come here.)

TABLE 9
THE DECREASING NUMBER OF MEDICAL SCHOOL
APPLICANTS*

1948-1949	24,242
1957-1958	15,791

*J.A.M.A., November 15, 1958, Table 23.

It would be unwise and economically unsound to attempt to train more doctors in Iowa. The State University of Iowa already accepts a higher percentage of applicants than any other medical college in the country. In fact a higher percentage of Iowa resident applicants to medical college (regardless of school) are accepted than from any other state. The number of well qualified applicants to medical colleges is decreasing. (There were 24,242 applicants in 1948 in the United States, and 15,791 in 1957.) It can be documented that we are already accepting many who probably should not be accepted. Many of these in the

lower categories are failing. The faculty has been seriously concerned over the number of failures in the last few years. The present graduating class has the highest per cent of failures that we have had in many years.

A study of the residency program at the State University of Iowa shows that during the last year 24 physicians completing their residencies stayed in Iowa. Of these, 16 were graduates of medical schools outside of Iowa. In other words, 16 physicians, graduates of out-of-state schools, located in Iowa as a result of the residency training program this last year at the University. Residency training is an area which deserves strengthening in the state.

TABLE 10
DESTINATIONS OF RESIDENTS WHO FINISHED
TRAINING AT S.U.I. IN 1957-1958

To Iowa practices	
S.U.I. graduates	7
From other medical schools	10
	17
Stayed on staff of College of Medicine	
S.U.I. graduate	1
From other medical schools	6
	7
Went elsewhere to practice, or into military service	40
All who completed training	64

Regarding internships, there is only one approved internship per 33,000 population in Iowa, as contrasted to one for 13,000 for the country as a whole.

Recommendations.

a. That the undergraduate enrollment in the State University of Iowa College of Medicine not be increased.

This recommendation is due to (1) a dearth of adequately qualified applicants, and (2) evidence that the number of graduates does not materially affect the number of doctors locating in the state, especially in areas where most needed.

TABLE 11
INTERNSHIPS, 1958

	Iowa	U.S.A.
Available	83	11,958
Filled	50	6,734
Internship/Population Ratios		
	1/33,100	1/13,100

Local medical societies could do medicine a great service if they would institute local programs aimed at recruiting superior young people into medicine. The group at Marshalltown has already embarked on such a program, and is to be commended.

b. That the Legislature consider an incentive program aimed at getting doctors to locate in the areas of greatest need. This program has been reasonably successful in Mississippi. It has not been successful in Illinois.

c. That the State Medical Society expand its doctor placement program by offering consultation service to

communities needing physicians and by conferring with the Sears Roebuck Foundation.

The Sears Roebuck Foundation will assist in providing plans for clinics, economic consultation, etc. Small towns should be studied and advised. For instance, perhaps two small towns might go together to build a clinic building.

d. That the hospitals of Iowa that are in a position to do so increase the number of internships and residencies, and improve the quality of their internship and residency training program to attract more young doctors to the State of Iowa.

NORMAN NELSON, M.D.

COMMITTEE ON PUBLIC HEALTH

(Referred to the Reference Committee on Miscellaneous Business for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

Since publication of this Committee's report in the HANDBOOK, the Chairman has had the opportunity to meet with Dr. James P. Conway, President of the American Association of Medical Milk Commissions, regarding the establishment of a Medical Milk Commission in Iowa. The purpose of such a Commission would be to encourage the production of better quality milk in Iowa.

At a previous meeting, the Committee on Public Health approved the establishment of a Medical Milk Commission, provided that the milk to be certified be limited to pasteurized milk. Dr. Conway advised that a Commission could be established with this limitation.

Plans for the organizational structure of a Medical Milk Commission in Iowa, developed by the chairman of the Committee with Dr. Conway and subsequently approved by four members of the Committee, are as follows:

The Commission would consist of a committee of five physicians, together with a lay member serving in an advisory capacity. The physicians on the 5-man committee would consist of three appointed physicians; a bacteriologist; and Dr. E. G. Zimmerer, Commissioner of Health. Because of his great interest in establishing a Medical Milk Commission in Iowa, Mr. L. B. Liddy, Chief of the Dairy and Food Division of the Iowa Department of Agriculture, was suggested as the lay member serving as consultant to the Commission. The headquarters of the Commission would be in Des Moines. Financing of the Commission is to be provided by the producers, who are to pay all expenses involved.

Prior to formation of a Medical Milk Commission, approval must be received from the American Association of Medical Milk Commissions. The earliest date at which this final approval can be secured will be in June, 1959. The Commission, if established, must operate in accordance with the "Methods and Standards for the Production of Certified Milk of the American Association of Medical Milk Commissions, Inc.—1958 Revised."

The Committee on Public Health wishes to submit the following resolutions to the House of Delegates for consideration:

RESOLUTION

WHEREAS, The Committee on Public Health recognizes that the organization and operation of a Medical Milk Commission in Iowa would encourage the production of better qual-

ity milk and therefore be beneficial to the people in the state, and

WHEREAS, Several of the dairies in the state have indicated a definite interest in the establishment of such a Commission; now, therefore be it

Resolved, That this House of Delegates authorize the Iowa State Medical Society to take the lead and cooperate in the establishment of a Medical Milk Commission in Iowa; said Commission to be: (1) Established in accordance with the organizational structure approved by the Committee on Public Health, (2) Limited to the certification of only pasteurized milk, and (3) Operated in accordance with the rules and regulations of the American Association of Medical Milk Commissions.

E. A. LARSEN, M.D., *Chairman*

SUBCOMMITTEE ON INTERPROFESSIONAL ACTIVITIES

(Referred to the Reference Committee on Miscellaneous Business for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

The House of Delegates in April, 1958, authorized the Subcommittee on Interprofessional Activities to proceed with the development of a Code of Understanding in cooperation with the Iowa Pharmaceutical Association. During the past year, members of the ISMS committee have met with representatives of a similar committee of the Iowa Pharmaceutical Association, and have completed work on a Code of Understanding.

This Code of Understanding was approved by the Iowa Pharmaceutical Association at its Annual Meeting in February this year, and is now presented to this House of Delegates for its consideration:

PHYSICIAN-PHARMACIST CODE OF UNDERSTANDING

The purpose of this Code of Understanding is to improve relations between doctors of medicine and pharmacists. Its provisions are intended as guides for physicians and pharmacists in their inter-related practices in the areas covered by it.

This Code of Understanding is not a pronouncement of law, but constitutes suggested rules of conduct for the members of these two health professions, subject to the principles of ethics governing the members of the respective organizations, and rules of law prescribed for their individual conduct.

This Code constitutes the recognition that doctors of medicine and pharmacists are inter-dependent upon one another in serving the patient.

It is the hope of the parties who have participated in the development of this Code of Understanding that by an improved and closer relationship between the professions of medicine and pharmacy, the public will be better served.

Pharmacist (Prepared by Iowa Pharmaceutical Association)

The pharmacist should never diagnose or prescribe even at the insistence of the patient, but should refer those needing medical attention to a doctor of medicine of the patient's choice.

The sale of proprietary products and home remedies that have been released by the Federal Food and Drug Administration for over-the-counter sale which the patient may request for self-medication shall not be considered counter prescribing by the pharmacist.

In an emergency or preceding arrival of the physician, the pharmacist will render such first-aid treat-

ment as is indicated by scientific knowledge and good judgment.

If there is any question in the pharmacist's mind regarding the ingredients of a prescription, possible error or safety of the drug, he should privately and tactfully consult the physician before making changes and never discuss it with, or in the presence of, the patient.

The pharmacist shall follow exactly the prescriber's directions in the refilling of a prescription. If no refilling instructions are contained on the original prescription, the pharmacist will not, and according to law cannot, refill such prescription without the authority of the prescriber. Such authority can be obtained orally.

The pharmacist should never discuss the composition of a prescription or its therapeutic effects with the patient. When such questions arise he should diplomatically suggest the prescriber is the proper person with whom such matters should be discussed.

The pharmacist shall be responsible for providing a complete bank of drugs on which the physician may draw by prescription for the treatment of his patient and serve as a source of information to the physician on new drugs and their combinations in order that the patient may have advantage of the latest pharmaceutical developments.

Physician (Prepared by Iowa State Medical Society)

According to the American Medical Association's Code of Ethics, "it is not unethical for a physician to prescribe or supply drugs, remedies, or appliances as long as there is no exploitation of the patient." The Iowa State Medical Society is cognizant of this provision in medical ethics, but believes that out of respect to the profession of pharmacy and service to the patient, drug dispensing by a physician should be discouraged if adequate pharmaceutical service is readily available.

A physician is trained to diagnose and treat disease while a pharmacist is trained to compound prescriptions on the precise orders of a physician. The physician should recognize the specialized training of the pharmacist and utilize his services whenever it serves the best interest of the patient. Each of these professions should be respected and their areas of training and practice acknowledged to the fullest extent possible. The free choice of pharmacist should be permitted on the same basis as the free choice of physician.

The physician has a responsibility to make clear to the patient that even though a specific drug may be expensive, it is the best therapeutic agent he feels can be administered in treating the condition of the patient. A physician should not advise a patient as to the exact price of a prescription, any more than a pharmacist should attempt to establish a fee for a physician's service.

The physician should cooperate with the pharmacist, first, by specifying the number of times a prescription is to be refilled and, second, by making himself available to the pharmacist to determine whether or not his original orders should be altered after the original number of refills has been obtained.

The physician and the pharmacist should work together as a team in seeing to it that a patient is properly medicated. Through this teamwork a patient is properly served.

F. M. BURGESSON, M.D., *Chairman*

Supplemental Reports of Special Committees

COMMITTEE ON PATIENT CARE

(Referred to the Reference Committee on Miscellaneous Business for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

In accordance with the recommendations of the House of Delegates at its 1958 session, the Committee on Patient Care has held no specific meetings nor has had any special problems given it for consideration in the year 1958-59.

The Committee on Patient Care has carefully reviewed the reports, as published in the 1959 Handbook for the House of Delegates, the reports of the Committee on Medical Service, Public Health, Industrial Health, Medical Health, Nursing Education and Service, and all other reports of committees concerned with the total problem of patient care. After careful consideration of these reports, the Committee on Patient Care believes that the purposes of this Committee are admirably and completely carried out by the already existing committees and that the probable function of this Committee on Patient Care is one of correlation and advising in various aspects of the total problem of patient care. These functions, we believe, are probably best directed by the Executive Council of the Iowa State Medical Society rather than by a special committee.

Therefore, the Committee on Patient Care recommends that this Committee be discontinued as a continuing special committee of the Iowa State Medical Society.

C. J. BAKER, M.D., *Chairman*

NURSING EDUCATION AND SERVICE

(Referred to the Reference Committee on Legislation and Public Relations for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

Since the report for the HANDBOOK was written, a group from Iowa has visited two college-centered two-year nursing programs with the view toward their possible application to Iowa. The group was made up of representatives from the Fort Dodge schools who are interested in a two-year junior college nursing program, two Fort Dodge hospitals, the Iowa Hospital Association, the State Board of Nurses Examiners, Iowa Nurses Association, Iowa League for Nursing, and Iowa State Medical Society with Dr. O. N. Glesne representing this committee.

The first school visited was the Orange County Community College, Middletown, New York, in which the two year nursing program was started in 1952. The group visited with a representative of the State Office of Nursing for New York State, as well as with faculty members, who presented an outline of studies with particular attention given to those in the Science Department. Four hospitals in the area served by the Community College are cooperating in nursing technique, a laboratory course presented during the second year, using nurse educators from these hospitals as instructors hired by the college as members of the college faculty.

Two of the cooperating hospitals were visited, and afforded the group some information on this phase of the program. One of the hospitals visited has its own three-year nurses training program. It hires both graduates of its own three-year program and graduates of the two year program. The director of nurses in this particular hospital stated that if there was any difference it amounted to experience in the handling of patients. The graduate from the three year training program would seem to have more of the ability to immediately start taking care of the patient upon graduation, as compared to the graduate of the two year college sponsored program.

As for the social and psychological aspects, the two year college graduate perhaps handled her situation better than the three year nurses school training graduate. Thus while the impression gained was that possibly there was a deficiency in on-the-job training, the didactic aspect was perhaps better handled in the two year course of nurses training, and on-the-job training in handling patients was, in the three year training school graduate, the better.

The second program visited was at Vincennes University (Indiana) where a Vincennes 200-bed hospital is cooperating. This program was established in the fall of 1958, and this program still is in an early stage, is to be evaluated by the National League in April, 1959.

The officials in both colleges stated the purpose of the associate degree program in nursing was to prepare persons capable of performing the functions commonly associated with the R.N. Its purpose is not to educate a person for the role of a specialist or supervisor. It was understood at both colleges visited that the two year nursing program could be applied toward a bachelor's degree at a four year college or university in the various parts of the U. S. (including the University of Iowa). There seems to be no qualitative measure of how these nurses perform against which to judge graduates of junior college programs. The schools both felt that the determining factor should be the performance of the graduate rather than the length of the program.

In associate nursing degree education, the nursing courses have been reorganized and placed in different sequence. The content and learning experiences have been grouped into fewer courses. The new nursing curriculum includes both general and specialized education. Many facilities which provide health services such as classes for retarded, home for aged, physicians' offices, nursery schools, vocational rehabilitation, visiting nursing associations, etc., are used in these programs in addition to hospital facilities.

The impression gained from the visits to these two college-controlled programs would indicate there is a definite value in the two-year nursing training program and that a program sponsored by educational endeavors separate from hospital control may have certain advantages. However, nothing in this report should be construed as indicating that this sort of program should replace the three-year hospital sponsored and controlled nurses training school. It is felt, however, that the medical profession, in order to increase the number of nurses in Iowa, could and should, with the aid of all interested groups, support the following program:

1. A pilot program should be set up somewhere in the State of Iowa.

2. Changes might be made in the Iowa Code so that

the graduates of these schools sponsored by educational systems, namely the two-year junior colleges, can get their R.N., not after the completion of two academic years, but after completion of two academic years plus four to six months in service contact in the hospital training or orientation type of program.

3. Junior colleges should be invited to undertake and control such programs. The on-the-job orientation should take place in some manner of indoctrination developed by the participating hospitals in cooperation with the junior colleges and under control of the junior colleges.

4. The total number of weeks' experience in either /or both the didactic and clinical aspects probably should add up to 90 or more weeks of 40-48 hours. If the applicant then passes the examination for nurses training, the same one used for the three-year graduate, she could be given her R.N. with all privileges of same.

The committee is continuing its study of the best possible way to obtain more nurses for Iowa.

HENNING W. MATHIASSEN, M.D., *Chairman*

COMMITTEE ON GROUP INSURANCE

(Referred to the Reference Committee on Insurance and Medical Service for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

The Committee on Group Insurance has completed its study of group proposals submitted by Blue Cross and Blue Shield for members of the State Society, their dependents and their employees. An outline of these proposals was mailed to each member of the House of Delegates prior to the Annual Meeting.

ISMS—DOCTORS' GROUP

ENROLLMENT PROVISIONS FOR MEMBERS OF THE IOWA STATE MEDICAL SOCIETY

Members of the Iowa State Society are eligible to enroll regardless of their age and the rates quoted will be the same for like contracts for all members of the Society. A member of the Society may continue his coverage as long as he is a member of the Society.

If 50 per cent of the members of the Society enroll on the initial offering, the group will be accepted.

A wife of a member shall have the privilege of continuing the coverage for herself and dependent children upon the death of her husband.

Dependent children will be covered from birth to 19 years of age or marriage. Coverage will be continued after 19 years of age to age 23, if the dependent is single and a student in college.

HOW YOUR GROUP RATES WILL BE COMPUTED

Groups over 200 are rated on their own experience and rates. After a 12 month period, rates will depend upon your own group's use. The rates quoted will be guaranteed for one year.

BENEFITS IN BLUE CROSS MEMBER HOSPITALS

When a bed patient in a Blue Cross member, hospital for other than alcoholism or drug addiction, a subscriber and each eligible member of the subscriber's family will receive the following listed benefits paid-in-full for 365 days. (Cases of alcoholism or drug addiction are limited to 30 days.) In addition, if three

months elapse between date of discharge from the hospital and date of readmission to the hospital, the patient is again eligible for benefits for 365 days.

There Will Be an Allowance of Up to \$20.00 Per Day on Room Charges

Use of Operating Room
Anesthetic Materials Furnished by the Hospital
Administration of Anesthesia by Salaried Hospital Employee

Surgical Dressings, Casts, Splints
Approved Drugs and Medicine
Transfusion Service
(Does Not Include Blood or Plasma)
Basal Metabolism Tests
(When Consistent With Diagnosis)
Electrocardiograms
(When Consistent With Diagnosis)
Physical Therapy
Oxygen Therapy
Maternity Care, Including Delivery Room and Care of Newborn
Diagnostic X-ray and Pathology Services (provided by Blue Shield)

BENEFITS IN HOSPITALS NOT MEMBERS OF A BLUE CROSS PLAN

Allowance of up to \$20 per day on room charges plus up to \$200 in extra services listed above, for 365 days.

DEDUCTIBLE OPTIONS

The above benefits are subject to \$100 deductible per admission or \$200 deductible per admission depending upon which contract you select.

RATES FOR ABOVE BENEFITS

	<i>Single Rate</i>	<i>Two-Person Rate</i>	<i>Family Rate</i>
\$100 deductible per admission	4.00	8.65	8.65
\$200 deductible per admission	2.70	5.85	5.85

BLUE CHIP COVERAGE

\$5,000 Maximum per illness or accident, \$50 deductible or \$100 deductible. When the deductible has been satisfied . . . the following benefits will be paid in full when charges are customary and reasonable.

Surgical Services
Accident Care
Radium Treatment or X-Ray Therapy
Anesthesia
Maternity, including postnatal and prenatal care
In-Hospital Medical Services, including:
Intensive Medical Care
Consultation Services
Concurrent Services

RATES FOR BLUE CHIP COVERAGE

	<i>Single Rate</i>	<i>Two-Person Rate</i>	<i>Family Rate</i>
\$ 50 deductible ...	1.75	4.10	6.00
\$100 deductible ...		3.50	4.90

ISMS—DOCTORS' EMPLOYEES GROUP

ENROLLMENT PROVISIONS FOR EMPLOYEES OF MEMBERS OF THE IOWA STATE MEDICAL SOCIETY

Employees of members of the State Society are eligible to enroll regardless of their age and the rates

quoted will be the same for like contracts for all members of the Society. An employee of a member of the Society may continue this coverage as long as he is an employee of a member of the Society. When no longer employed by a member of the Society, he shall be eligible for a contract offered by the Plans.

If 50 per cent of the members of the Society enroll on the initial offering, any employees of a member of the Society will be accepted.

Dependent children will be covered from birth to 19 years of age or marriage.

HOW YOUR GROUP RATES WILL BE COMPUTED

Groups over 200 are rated on their own experience and rates; after a 12 month period, rates will depend upon your own group's use. The rates quoted will be guaranteed for one year.

BENEFITS IN BLUE CROSS MEMBER HOSPITALS

When a bed patient in a Blue Cross member hospital for other than nervous and mental, tuberculosis, alcoholism or drug addiction cases, a subscriber and each eligible member of the subscriber's family will receive the following listed benefits paid-in-full for 70 days. (Nervous and mental, tuberculosis, alcoholism or drugs addiction cases are limited to 30 days.) In addition, if three months elapse between date of discharge from the hospital and date of readmission to the hospital, the patient is again eligible for benefits for 70 days.

- There Will Be Semi-Private Room Allowance
- Use of Operating Room
- Anesthetic Materials Furnished by the Hospital
- Administration of Anesthesia by Salaried Hospital Employee
- Surgical Dressings, Casts, Splints
- Approved Drugs and Medicines
- Transfusion Service
- (Does Not Include Blood or Plasma)
- Basal Metabolism Tests
- (When Consistent With Diagnosis)
- Electrocardiograms
- (When Consistent With Diagnosis)
- Physical Therapy
- Oxygen Therapy
- Maternity Care, Including Delivery Room and Care of Newborn
- Diagnostic X-ray and Pathology Services (provided by Blue Shield)

BENEFITS IN HOSPITALS NOT MEMBERS OF A
BLUE CROSS PLAN

Semi-Private room allowance plus up to \$200 in extra services listed above for 70 days.

DEDUCTIBLE OPTIONS

The above benefits provide full coverage or \$25 deductible per admission depending upon which contract you select.

	Single Rate	Two-Person Rate	Family Rate
Full coverage	2.95	8.40	8.40
\$25.00 deductible per admission	2.45	6.95	6.95

BLUE CHIP COVERAGE

\$1,000 maximum per illness or accident. \$25.00 deductible. When the deductible has been satisfied . . . the following benefits will be paid in full when charges are customary and reasonable.

- Surgical Services
- Accident Care
- Radium Treatment or X-Ray Therapy
- Anesthesia
- Maternity, \$75 limited obstetrical delivery benefit
- In-Hospital Medical Services, including:
 - Intensive Medical Care
 - Consultation Services
 - Concurrent Services

The Plan B 300 providing the same scope of benefits but on a fixed fee schedule and with \$60 obstetrical delivery is available as an alternate.

RATES

Single Rate Two-Person Rate Family Rate

Blue Chip \$25 deductible	1.85	4.55	5.80
Plan B 300	1.60	3.80	4.85

The Committee on Group Insurance recommends for your consideration, a group proposal which will provide Major Hospital and Physician coverage for members of the State Society and their dependents. We also recommend for your consideration, a different proposal for coverage of the employees of members of the Society. For these proposals to qualify for issue, it is necessary that 50 per cent of Society members participate in the original offering. We feel that the proposals for coverage of the members of the Society and their dependents will provide reasonable basic coverage as well as coverage for the catastrophic type of illness.

W. O. PURDY, M.D., *Chairman*

CHIROPRACTIC COMMITTEE

(Referred to the Reference Committee on Legislation and Public Relations for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

Since publication of your Committee's report in the HANDBOOK, chiropractors' activities in the Iowa State Legislature have caused the Committee to consider a definite revision in its attitude toward chiropractic in Iowa.

The Chiropractic Society of Iowa (the Palmer or straights) joined the Iowa Chiropractors Association (the Webster City or mixer group) in an energetic lobbying attempt to obtain membership on the Board of Health via amendments to S.F. 335—a bill to reorganize the Board of Health which was supported by the ISMS and Iowa Interprofessional Association. A third group, formed for political action purposes and known as the "Chiropractic Profession of Iowa," has been active in this lobbying attempt and this group reportedly was financed by voluntary contributions from both mixers and straights. It is well known that many chiropractors are members of both groups. The chiropractors were successful in amending the Board of Health Bill in the Senate but it is now in the hands

of the House Sifting Committee where its fate is very uncertain.

The fact that the straights for the first time have joined forces with the mixers, at least legislatively on this one bill, leads to speculation that perhaps an official merger may be the next step. The ISMS in the past has followed a policy of containment toward chiropractic and has made no attempt to eradicate it, particularly since the Palmer organization has not previously espoused mixer proposals.

While the above policy of containment may still be basically sound, we now have reason to believe that the mixers are becoming the stronger of the two organizations and may further coerce the straights into following mixer proposals to enhance chiropractic and broaden it into the practice of medicine.

Even prior to the current legislative session the mixer group was active in trying to get the straights to join them in possibly introducing legislation to enable chiropractors not only to become licensed physical therapists but also allowing them to use heat, nutritional supplements, traction and other modalities which would expand chiropractic again into the practice of medicine. Such legislation was not introduced.

In view of the above, your Committee recommends that the following course of action, much of it approved by former sessions of the House of Delegates, be reaffirmed:

(1) That the Committee on Chiropractic be continued on an alert and vigilant basis with the thought that if the policy of containment is not successful a more aggressive policy be pursued.

(2) That the ISMS be authorized to take whatever steps may become necessary, on a legislative and public relations front, to protect the interest of the public against any group or groups of untrained, unqualified cultists, quacks, and chiropractors who are seeking to enhance and broaden their scope of practice into the practice of medicine.

R. A. BERGER, M.D., *Chairman*

DOCTORS' ASSISTANTS ADVISORY COMMITTEE

(Referred to the Reference Committee on Miscellaneous Business for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

A Placement Bureau has been set up with the Iowa State Employment Service for employment in the medical office. Material is being sent to all physicians in Iowa explaining this service. There are thirty-five state employment offices in Iowa and each office will handle requests by physicians for office help, as well as applications from medical assistants for employment. Categories of medical office jobs have been listed and aptitude tests will be given by the ISES where applicable. This is a free service to all physicians and medical assistants.

A meeting was held with Dr. William D. Coder, Coordinator of Conferences, Extension Division, State University of Iowa, and the idea of an extension course for medical assistants was presented to him. Doctor Coder was of the opinion that an in-service training period of one week at the Iowa Continuation Center at Iowa City would be more beneficial than a lecture one night a week over a period of several months.

A pilot course has been scheduled for November 9

through 13, 1959, at the Iowa Continuation Center, Iowa City, and the class will be limited to forty members. If the registration warrants, a second class will be given within a few weeks from the first class. To be taken up in this first course will be: Communications and Human Behavior, including telephone, correspondence, personal contact and greeting the patient; also Office Management, including office procedures, intra-office relations and arrangements of the office.

It is the hope of the committee that future classes may be offered in subsequent years with more advanced courses.

The Advisory Committee is deeply appreciative of the tremendous amount of work that has been expended by Mr. Donald L. Taylor in setting up the Medical Placement Bureau and the In-Service Training Program.

F. A. SPRINGER, M.D., *Chairman*

COMMITTEE ON PARAMEDICAL SERVICES

(Referred to the Reference Committee on Legislation and Public Relations for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

The following conclusions and recommendations were reached by two members of the Committee on Paramedical Services meeting with three representatives of the Iowa Chapter of the American Physical Therapy Association. These conclusions and recommendations were subsequently approved by the other three members of the Committee on Paramedical Services.

Several means were approved by which to expose the public and more particularly the membership of the Iowa State Medical Society to the nature of physical therapy, and on the qualifications, training, etc., of qualified physical therapists, their desire to work only on prescription and under supervision of a physician, etc. These means are:

1. Publicizing of availability of the career movie, "The Return," which features a team effort with an M.D. in charge.

2. Publicizing of the availability of physical therapists to appear, with or without an M.D., before county medical society meetings.

3. Editorials and/or articles, authored or coauthored by M.D.'s, in the JOURNAL describing the profession of physical therapy.

4. Noting to the doctors the existence of a directory of qualified physical therapists listing those who are members of either or both the American Physical Therapy Association and the American Registry of Physical Therapists. (The latter Registry sponsored by the American Congress of Physical Medicine and Rehabilitation.)

5. Joint study and action working toward utilization of Iowa TV channels in publicizing the importance of physical therapy and the dangers of using unqualified practitioners.

It is further recommended by the committee that the Iowa State Medical Society should take the lead in studying with Bell Telephone the possibility of stricter requirements for listing under the heading "Physical Therapy" in telephone directories. It was also recommended that the Iowa State Medical Society, by whatever means available, secure the cooperation of the Board of Medical Examiners in policing massage parlors, etc., which practice physical therapy independent of doctors of medicine.

Dr. J. T. Bakody, chairman, Dr. C. B. Larson and Dr. F. C. Coleman constitute the subcommittee of the Committee on Paramedical Services to serve as liaison with the physical therapists and will have subsequent meetings with them as this long range program develops.

F. EBERLE THORNTON, M.D., *Chairman*

Resolutions

CERRO GORDO COUNTY MEDICAL SOCIETY

BLUE SHIELD PROPOSALS

(Referred to the Reference Committee on Insurance and Medical Service for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

WHEREAS, The Cerro County Medical Society believes that the recent action of the House of Delegates of the Iowa State Medical Society with reference to Blue Shield coverage fails to consider some of the basic social and moral implications of this action, and

WHEREAS, The Cerro Gordo County Medical Society deplores the methods used to limit debate at the special meeting of the House of Delegates, February 22, 1959, and

WHEREAS, The Cerro Gordo County Medical Society does not agree that a middle income full service contract is advisable or that it should be tied to whatever contract is offered to people over 65, and

WHEREAS, The Cerro Gordo County Medical Society cannot approve of a \$2.00 fee unit for non-indigent patients while demanding a \$3.00 fee unit from the Vendor and local indigent programs, and

WHEREAS, The Cerro Gordo County Medical Society does not approve of the reference committee's blanket approval

of Blue Shield middle income and over-65 contracts, therefore be it

Resolved, That the action of the Iowa State Medical Society House of Delegates in special meeting, February 22, 1959, concerning Blue Shield be reversed and the two types of contracts considered separately and specifically upon their own merits.

UNION COUNTY MEDICAL SOCIETY NO. 1

ESSAYS ON BLUE SHIELD

(Referred to the Reference Committee on Insurance and Medical Service for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

WHEREAS, The past year has seen much coverage in our IOWA STATE MEDICAL JOURNAL of the subject "Blue Shield States Its Case," and

WHEREAS, We feel this is right and proper that dissemination of such information through this channel is reasonable, but

WHEREAS, There are very many dues paying members of our Society who differ considerably with the philosophy of Blue Shield and the service principle, and

WHEREAS, The whole story about Blue Shield and the Service Principle is incomplete without a study of the disadvantages inherent in Blue Shield and the service principle, therefore be it

Resolved, That this body of the Iowa State Medical Society assembled in regular annual session request the Editorial Staff of the JOURNAL of the Iowa State Medical Society to seek out members of the Iowa State Medical Society who can and will present one or more essays on the subject "dangers and disadvantages in Blue Shield and the service principle" within the next six months (in or before the November 1959 issue), therefore be it further

Resolved, That if the JOURNAL of the Iowa State Medical Society is to become a forum on socio-economic issues, as we do not object that it become, that it be asked in the

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light of total education to its member readers to present the pros and cons of such subjects.

UNION COUNTY MEDICAL SOCIETY NO. 2

SELECTION OF REFERENCE COMMITTEE MEMBERS

(Referred to the Reference Committee on Reports of Officers for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

WHEREAS, The socio-economic problems of our nation and our profession are mounting by the day, and

WHEREAS, There is no one certain solution to any or all of these problems, and

WHEREAS, In fact there may be several solutions to these problems no one presently known in the light of today as being the very best solution for tomorrow, and

WHEREAS, Our type of governmental philosophy nurtures the idea of majority opinions with respect for minority opinions and rejects the totalitarian one right thought idea, therefore be it

Resolved, That due care be taken in selection of reference committee members to purposely select members known to reflect multilateral views so that our Society may benefit and become more informed by their deliberations, and therefore be it further

Resolved, That unanimous agreement not be sought on many issues and that minority opinions and reports be urged when necessary to better bring out the total thinking and reflections of the whole society.

DALLAS-GUTHRIE COUNTY MEDICAL SOCIETY

BLUE SHIELD SERVICE CONTRACTS

(Referred to the Reference Committee on Insurance and Medical Service for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

WHEREAS, The original concept of Blue Shield was for catastrophic illness of the low income group, and

WHEREAS, Other segments of the population are now clamoring to get on the "Gravy Train" of a full coverage contract, and

WHEREAS, It being a known fact there have been numerous incidents of attempted abuse of full coverage contracts, and the general feeling of the population being conditioned to feel such attempts at abuse are not wrong, and

WHEREAS, Statistics show the national bill for medical services is far less than for either alcohol or tobacco, and

WHEREAS, The contracts proposed do not account nor provide for rising operational or living costs, and the autonomy of the medical profession is sacrificed for a bureaucracy, therefore be it

Resolved, That the Dallas-Guthrie County Medical Society, a component part of the Iowa State Medical Society, is opposed to a full service contract for the middle income group, and favors, if some contract must be made, one of a deductible type, and be it further

Resolved, The Dallas-Guthrie County Medical Society favors the \$3,600 income limit for full coverage, as it now stands.

MARION COUNTY MEDICAL SOCIETY

MALPRACTICE SUITS

(Referred to the Reference Committee on Legislation and Public Relations for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

WHEREAS, Though the Iowa State Medical Society believes patients are entitled to legal protection against any negligence by a physician, it is concerned about the increasing number of suits having no merit or justification, and

WHEREAS, The main motive behind these unnecessary law suits, is that such litigation is profitable. It is profitable because the plaintiff usually engaged his attorney on a contingent fee basis. This means that the plaintiff's attorney gets no fee if he loses the case and the plaintiff is only out court costs. If they win both share in the winnings which may amount to many thousands of dollars. This is all legal under Iowa's present law, and

WHEREAS, If the losing party to a law suit had to pay the winning party all his expenses including those for the necessary services of a lawyer, like they have to do in most civil law countries in Europe, Nuisance Suits no longer would be profitable. With our present law each party to a law suit, except under certain conditions, pays his own lawyer's fee, and

WHEREAS, The innocent defendant in these unwarranted law suits always loses. If he wins the case he still has to pay his attorney's fee. If he loses, which happens in about one out of four cases, he not only has to pay his attorney but also court costs and often a penalty of a considerable amount, and

WHEREAS, If the proposed change in the Iowa law is enacted it is also necessary to provide means whereby the poor man can sue if he has a legitimate case. And some pre-determined rate must be set so the losing party need only pay to the winning party's attorney a reasonable fee. The winning party's attorney's fee is not fixed because he can charge his client an additional sum, and

WHEREAS, If the above proposed legislation were enacted, (1) Nuisance suits no longer would be profitable—hence fewer suits, (2) Insurance rates would be lower. Medical costs would be less as the patient pays for the extra insurance, (3) More time for legitimate cases (New York state is now four years behind in their court cases), (4) The plaintiff in justifiable and successful litigation would have his lawyer's fee paid by the loser who was guilty, (5) A law which makes Nuisance Suits profitable would be replaced by a law which makes them unprofitable, now therefore be it

Resolved, That in order to deter unnecessary law suits or Nuisance Suits, the state legislature enact a law or change the law as now on the statute books to the effect, whereby the losing party to a law suit must pay the winning party all his expenses including those for the necessary services of a lawyer, and be it further

Resolved, That appropriate legislation shall be enacted so that the poor man, if he has a legitimate case, can sue and that some pre-determined fee shall be established or some regulation shall be made as to the fees the losing party pays the other attorney.

STORY COUNTY MEDICAL SOCIETY

MAKING THE DEAN OF STATE UNIVERSITY OF IOWA COLLEGE OF MEDICINE MEMBER OF ISMS HOUSE OF DELEGATES

(Referred to the Reference Committee on Articles of Incorporation and By-Laws for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

WHEREAS, There is at present no official means of communication between the Executive Branch of the College of Medicine of SUI and the House of Delegates of the Iowa State Medical Society, and

WHEREAS, An interrelationship of the parties mentioned is desirable when matters of policy affecting both parties are considered, and

WHEREAS, The following resolution would in no manner seriously affect the function of either party other than to provide a means of communication between them, therefore be it

Resolved, That the Committee on Articles of Incorporation and By-Laws be instructed by the House of Delegates to study the question and present at a later date to the House of Delegates a plan by which the Dean of the College of Medicine of the State University of Iowa would be a member of the Iowa State Medical Society's House of Delegates.

JUDICIAL COUNCIL OF THE IOWA STATE MEDICAL SOCIETY

NOMINATING COMMITTEE

(Referred to the Reference Committee on Articles of Incorporation and By-Laws for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

Resolved, that Chapter IV, Section 2, of the By-Laws of the Iowa State Medical Society be amended by striking the whole of said section and substituting in lieu thereof the following:

Not later than February 15 of each year there shall be elected a Committee on Nominations consisting of eleven delegates, one from each Councilor District, elected by the respective delegates of that Councilor District. It shall be the duty of the Committee to hold meetings, including an open meeting, at which the interest of the Society and the profession of the state shall be carefully considered. The open meeting shall be held not later than March 5, and the notice of the meeting shall be sent to all members of the Society at least ten days prior to the date of the meeting. Said notice shall include a list of the names of the Nominating Committee, together with an informative statement as to vacancies to be filled. Not later than March 10, the Committee shall report its official ticket containing the names of one member as candidate for each vacancy in the office of Councilor, and, when practicable, two or more members as candidates for all other offices. This ticket shall be sent to every member of the Society not later than twenty days previous to the first session of the House of Delegates. Two candidates for the same office shall not be named from the same county.

SCOTT COUNTY MEDICAL SOCIETY

BLUE SHIELD SENIOR 65 PLAN

(Referred to the Reference Committee on Insurance and Medical Service for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

WHEREAS, The Executive Council of the Iowa State Medical Society has empowered Iowa Medical Service, Inc., to draw up a special Blue Shield policy for people over sixty-five, calling for a reduced fee schedule for the physicians, and

WHEREAS, It is too easy for people to make the error of thinking that such reduced fees are the regular ones, and

WHEREAS, The medical profession is in a singularly exposed position today, subject to critical attack which is usually unmerited, and particularly under fire in matters of financial remuneration, therefore be it

Resolved, That the Scott County Medical Society instruct its delegates and urge the Iowa State Medical Society that they insist upon the following arrangement for the low fee schedule policy as brought out by the Iowa Medical Service, Inc.: The fees in such a schedule shall be the usual fees of the standard Blue Shield schedules, but that payments will be made on a pro-rated basis, the actual percentage to depend upon the current fiscal experience.

POTTAWATTAMIE COUNTY MEDICAL SOCIETY

BLUE SHIELD

(Referred to the Reference Committee on Insurance and Medical Service for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

WHEREAS, The original purpose for the creation of Blue Shield was to provide a voluntary prepayment method of medical care for low-income individuals, and

WHEREAS, The Executive Committee of the Iowa Medical Service Board has committed the participating physicians of Blue Shield to a low fee-for-service schedule for low-income and middle-income individuals without consultation with the entire Blue Shield Board or the membership of its participating physicians, and

WHEREAS, The general level of the nation's economy is progressively inflating at a 3-4 per cent rate per year and the fees as indicated by the Blue Shield Executive Committee have not been adjusted to keep stride with this inflation, therefore be it

Resolved, That the Iowa State Medical Society advises the Iowa Medical Service that it will discontinue its sponsorship and support of Blue Shield if it proceeds to offer policies which provide full coverage to individuals and families with incomes greater than \$2,400 and \$3,600, respectively, unless it has been otherwise instructed by a ballotted majority vote of the entire membership of the participating physicians.

MARION COUNTY MEDICAL SOCIETY

BLUE SHIELD 65 PLAN AND MIDDLE INCOME PROGRAM

(Referred to the Reference Committee on Insurance and Medical Service for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

WHEREAS, The Iowa Medical Service (Blue Shield) has recently implemented two new types of policies, an over-65 policy and a full-service policy for middle income groups, and

WHEREAS, The Iowa Medical Service issued these policies without the full action of their board of directors and without adequate notice to the membership of the Iowa State Medical Society, and

WHEREAS, A considerable group of the membership of the Iowa State Medical Society is opposed to the issuance of these contracts, now therefore be it

Resolved, That the Iowa State Medical Society go on record as being opposed to the full service principle in Blue Shield or other insurance contracts and that Iowa State Medical Society take the necessary steps to withdraw from participation with Iowa Medical Service in any policies offering full service coverage.

WEBSTER COUNTY MEDICAL SOCIETY NO. 1

BLUE SHIELD

(Referred to the Reference Committee on Insurance and Medical Service for study and recommendation.

For final action by the House of Delegates, see the report of the reference committee.)

WHEREAS, The House of Delegates of the Iowa State Medical Society recently passed a resolution which encouraged the Iowa Blue Shield Organization to greatly expand its "Service" type contracts, and to inaugurate a special contract for the "Over 65" age group at substantially 40 per cent of the usual fees, and

WHEREAS, This action was taken by the House of Delegates on very short advance notice which did not permit the delegates to become familiar with the content and potentially troublesome effects of these actions on the private practice of medicine and on the ultimate quality of medical services in this state, and

WHEREAS, In the ensuing weeks there has been much discussion and re-evaluation of these Blue Shield proposals by members of the Iowa State Medical Society generally, now therefore be it

Resolved, That this House of Delegates reconsider the action of the House in the meeting of February 1959 with regard to the expanded full service Blue Shield contract, and the Senior 65 contract, and

Be It Further Resolved, That this resolution be considered individually by the House of Delegates.

WEBSTER COUNTY MEDICAL SOCIETY NO. 2

SALARY OF STATE MEDICAL LIBRARIAN

(Referred to the Reference Committee on Legislation and Public Relations for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

WHEREAS, Dr. Jeannette Dean-Throckmorton has for many years served the medical profession and the people of Iowa in her capacity as Librarian of the Iowa State Medical Library, and

WHEREAS, She has fulfilled the requirements of her position efficiently and well, and has been of great assistance to members of this Society in maintaining and furthering their professional knowledge, and

WHEREAS, For many years this able physician has received compensation far below what her training, experience, and general competence would reasonably merit, and

WHEREAS, recent efforts on her behalf by members of this Society to enlist support for her requests for an increased salary from the State of Iowa have been fruitless, now therefore be it

Resolved, That the House of Delegates of the Iowa State Medical Society, through the officials of the Iowa State Medical Society, officially request appropriate officials and agencies of the State of Iowa to reconsider the salary of Dr. Jeannette Dean-Throckmorton, and make every effort to obtain for her a fair and reasonable compensation.

CALHOUN COUNTY MEDICAL SOCIETY

INSTRUCTION OF AMA DELEGATES IN REGARD TO NATIONWIDE PUBLIC INFORMATION PROGRAM

(Referred to the Reference Committee on Legislation and Public Relations for study and recommendation. For final action by the House of Delegates see the report of the reference committee.)

WHEREAS, The general public throughout the nation is obviously ill-informed as to the superiority and relative low cost of that portion of the total cost of medical practice, provided by the medical profession and because of the unremitting attack on the foundations of the private practice of medicine by self-seeking politicians and

WHEREAS, The effectiveness of massive public educational programs has been often demonstrated; therefore be it

Resolved, That the Iowa delegates to the AMA meeting be specifically instructed to introduce and campaign strongly for a massive national public information program based on facts, financed by assessment on members and guided by professional public relations experts, the object being to regain in the public mind the high position deserved by performance of the private practice of medicine, and thereby to strengthen resistance by the public to further inroads of political medicine.

POLK COUNTY MEDICAL SOCIETY NO. 1

RESOLUTION TO RECALL THE \$5,400 FULL SERVICE BLUE SHIELD CONTRACT

(Referred to the Reference Committee on Insurance and Medical Service for study and recommendation.

For final action by the House of Delegates, see the report of the reference committee.)

WHEREAS, A recent poll of the members of the Polk County Medical Society revealed that a majority of them disapproved of the \$5,400 full service contract, and

WHEREAS, This same poll revealed that a majority of our members would be in favor of a resolution to reverse the action in support of Blue Shield proposals adopted at the February 22, 1959 meeting of the House of Delegates, and

WHEREAS, A \$5,400 full service contract covers approximately 50 per cent or more of the population of Iowa, and

WHEREAS, To offer medical services to 50 per cent or more of the population at reduced fees inescapably implies overcharge in the past,

Therefore, *Be It Resolved*, That the \$5,400 full service Blue Shield contract no longer be offered for sale, and

Therefore, *Be It Further Resolved*, That Blue Shield be instructed to implement the above action immediately.

POLK COUNTY MEDICAL SOCIETY NO. 2

RESOLUTION CALLING FOR NON-PREFERENTIAL FEES FOR RADIOLOGICAL AND PATHOLOGICAL SERVICES PROVIDED BY BLUE SHIELD CERTIFICATES

(Referred to the Reference Committee on Insurance and Medical Service for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

WHEREAS, A recent poll of Polk County Medical Society members revealed that a majority of them disapprove of paying full fees for pathological and radiological service on all Blue Shield contracts, and

WHEREAS, Much time, money, and energy has recently been expended to establish in the courts that pathologists and radiologists deserve equal status and consideration with other physicians, and

WHEREAS, It is believed that pathologists and radiologists neither ask for nor expect preferential treatment in the payment of Blue Shield benefits,

Therefore, *Be It Resolved*, That all Blue Shield full service contracts be revised so that pathologists and radiologists are paid only that portion of the customary full fee that is paid to all other physicians, and

Therefore, *Be It Further Resolved*, That Blue Shield be instructed to implement the above changes immediately.

POCAHONTAS COUNTY MEDICAL SOCIETY NO. 1

PERMISSION FOR PHYSICIANS' CARS TO EXCEED SPEED LIMITS IN EMERGENCIES

(Referred to the Reference Committee on Legislation and Public Relations for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

WHEREAS, The Legislature has passed and the Governor has signed a law setting speed limits on the various types of highways and forbidding private citizens from exceeding them, and

WHEREAS, The strict enforcement of these speed limits conceivably could interfere with a patient's free choice of physician whenever distance and time are factors, now therefore be it

Resolved, That the Iowa State Medical Society, acting in behalf of its members and their patients, rural and urban, hereby petition the legislature and the governor to enact an amendment to the speed limit law or laws, authorizing a special designation or emblem for display on physicians' vehicles, and granting a special exemption to permit their legally exceeding the speed limits whenever emergency requires.

POCAHONTAS COUNTY MEDICAL SOCIETY NO. 2

REAFFIRMING ACTION OF FEBRUARY 22, 1959, ISMS HOUSE OF DELEGATES REGARDING BLUE SHIELD

(Referred to the Reference Committee on Insurance and Medical Service for study and recommendation.

For final action by the House of Delegates, see the report of the reference committee.)

WHEREAS, The February 22 actions of the House of Delegates and respective Reference Committees regarding Blue Shield have met with unwarranted criticism, implying that inadequate consideration was given to the Blue Shield Senior 65 and Middle Income Contracts, and that the true sentiment of the House of Delegates on these subjects was not voiced, and

WHEREAS, Considerable communications and correspondence have been disseminated throughout the state since the Special Session of the House of Delegates February 22, 1959, despite the fact that the final vote in favor of these contracts was 65-33, and

WHEREAS, The actions of Blue Shield in this matter have been to follow the directives of the ISMS, the House of Delegates, and Executive Council, and not to promulgate independently either of these contracts, be it therefore:

Resolved, That the House of Delegates reaffirm the position adopted by the special session of the House of Delegates, February 22, 1959, regarding Blue Shield activities, and

Be It Further Resolved, That individual physicians throughout the state offer constructive guidance within the organization of Blue Shield instead of negative criticism from without.

When the foregoing resolutions had been presented, Dr. Harold J. Peggs, of Creston, made the following statement: "There will be a motion from the floor at the next session of the House of Delegates to rescind the action of the House of Delegates of the ISMS in special session on February 22, 1959, which approved the Senior 65 and \$5,400 Blue Shield ISMS contracts."

MARION COUNTY MEDICAL SOCIETY

BLUE SHIELD SENIOR-65 PLAN AND THE VENDOR PROGRAM

(Referred to the Reference Committee on Legislation and Public Relations for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

The Marion County Medical Society goes on record as opposed to the Vendor Payment Program and the Senior-65 Blue Shield Program in the present form.

LIFE AND ASSOCIATE MEMBERSHIPS

LIFE MEMBERSHIPS

ON THE BASIS OF 50 YEARS' PRACTICE AND 30 YEARS' MEMBERSHIP

Black Hawk	Emery E. Magee, M.D., Waterloo
Delaware	Harry H. Ennis, M.D., Manchester
Des Moines	George B. Crow, M.D., Burlington
Greene	Frank E. Cressler, M.D., Churidan; and Benjamin C. Hamilton, M.D., Jefferson
Hancock-Winnebag	George F. Dolmage, M.D., Buffalo Center
Lucas	Albert L. Yocom, M.D., Chariton
Mahaska	Philip M. Day, M.D., Oskaloosa; and George E. Bartlett, M.D., New Sharon
Marion	Dean S. Burbank, M.D., Pleasantville
Marshall	Royal F. French, M.D., Marshalltown
Polk	Charles C. Walker, M.D., Des Moines
Story	Ransom D. Bernard, M.D., Ames; Sidney B. Goodenow, M.D., Colo; George J. Severson, M.D., Slater; and Alvin A. Rose, M.D., Story City
Wayne	John H. McCall, M.D., Allerton

ASSOCIATE MEMBERSHIPS

ON THE BASIS OF RETIREMENT OR INCAPACITATION

Fayette	John R. Wood, M.D., Wadena
Hardin	William H. Van Tiger, M.D., Eldora*
O'Brien	Chester F. Cashman, M.D., Hartley
Page	Clifford H. Brush, M.D., Shenandoah
Polk	James E. Dyson, M.D., Helen Johnston, M.D., Emery L. Mauritz, M.D., and Robert A. Culbertson, Des Moines
Story	Julian E. McFarland, M.D., Ames

Nominations for the outstanding Iowa General Practitioner of the Year Award were received.

The Chairman of the ISMS Osteopathic Committee presented a communication from the Iowa Society of Osteopathic Physicians and Surgeons which came to

* Added to the list by special action at the House of Delegates session on Wednesday morning, April 22.

his hands just prior to the convening of the House of Delegates. It was referred to the Reference Committee on Miscellaneous Business without comment.

The House of Delegates was adjourned at 1:07 p.m. Reference committees were asked to begin their hearings at 3:00 p.m.

WEDNESDAY SESSION

APRIL 22, 1959

The Wednesday session of the House of Delegates was called to order at 7:30 a.m. The House of Delegates approved the taking of attendance by registration cards. There were 103 delegates, 17 voting alternates, and 16 ex-officio members present.

County	Delegate	Alternate
Allamakee	M. F. Kiesau	
Appanoose	E. A. Larsen	
Audubon	L. E. Jensen	
Black Hawk	C. D. Ellyson	
	T. L. Trunnell	
	R. C. Miller	
	F. G. Loomis	
Boone	R. L. Wicks	
Bremer	R. E. Shaw	P. J. Leehey
Buchanan		
Buena Vista	H. E. Farnsworth	
Calhoun	C. R. Wilson	
Cass	R. H. Moe	
Cerro Gordo	J. K. MacGregor	
	L. W. Swanson	
	G. J. Sartor	
Chickasaw	P. C. Richmond	
Clarke	H. E. Stroy	
Clay	D. H. King	J. B. Compton
Clayton		
Clinton	R. O. Emmons	
	V. W. Petersen	
Dallas-Guthrie	W. A. Castles	
	R. J. Peterson	
Davis	W. D. Haufe	
Delaware	J. E. Tyrrell	
Des Moines	E. P. Russell	
	F. G. Ober	D. F. Rodawig, Jr.
Dickinson		
Dubuque	R. J. McNamara	
	D. F. Ward	
	L. F. Alt	
Emmet	R. L. Cox	
Fayette	A. F. Grandinetti	
Floyd	R. A. Fox	
Franklin	W. W. Taylor	
Greene	R. E. Jongewaard	H. V. Kahler
Grundy		W. B. McGahey
Hamilton		
Hancock-Winnebag	D. F. Shaw	
Hardin	J. J. Shurts	
Harrison	F. X. Tamsiea	
Howard	D. O. Maland	
Humboldt		
Iowa	D. F. Miller	Isaac Shohet
Jasper	K. H. Strong	R. F. Frech
Jefferson		R. A. Simpson
Johnson	W. M. Kirkendall	
	J. M. Layton	
	S. C. Ware	
	A. C. Wise	M. L. Mosher
Jones	E. H. DeShaw	
Kossuth	Paul Warner	
Lee	L. C. Pumphrey	
Linn	J. J. Keith	
	John Parke	
	J. J. Redmond	
	L. J. Halpin	
	C. H. Stark	H. D. Jarvis
Lucas		
Lyon	G. D. Bullock	
Mahaska	G. W. Bennett	
Marion	Peter Van Zante	
Marshall	O. D. Wolfe	
Mills	M. L. Scheffel	
Mitchell	R. J. Smith	J. L. Garred
Monona		
Montgomery	Oscar Alden	
Page	J. R. Eisenach	
Palo Alto	G. H. Keeney	
Plymouth	J. P. Trotzig	
Pocahontas	J. M. Rhodes	
Polk	J. T. McMillan	

County	Delegate	Alternate
	R. B. Stickler	
	M. E. Alberts	
	D. F. Crowley, Jr.	
	N. W. Irving, Jr.	
	J. T. Bakody	H. E. Wichern
	B. M. Merkel	
	A. B. Phillips	
	B. C. Barnes	
	J. G. Thomsen	Fred Sternagel
Pottawattamie	F. M. Burgeson	
	H. W. Mathiasen	
	F. N. Weber	
	G. H. Pester	
Poweshiek	J. R. Parish	
Ringgold	D. E. Mitchell	
Sac	J. W. Gauger	
Scott	W. S. Phetepplace	
	J. H. Sunderbruch	
	J. F. Bishop	
	P. E. Gibson	
Shelby	J. H. Spearing	
Sioux	M. O. Larson	
Story	G. E. McFarland, Jr.	
	G. E. Montgomery	
Tama	C. W. Maplethorpe, Sr.	
Taylor	R. W. Boulden	
Union	H. J. Peggs	
Van Buren	L. A. Coffin	
Wapello	K. E. Lister	
Warren	C. A. Trueblood	C. A. Boice
Washington		D. R. Ingraham
Wayne		
Webster	C. J. Baker	
	H. H. Kersten	
Winneshieik	E. F. Hagen	W. S. Thoman
Woodbury		
	P. L. Bettler	F. L. Wilson
	P. M. Cmeyla	
Worth	B. H. Osten	
Wright	C. P. Hawkins	

DELEGATES AT LARGE

T. D. Throckmorton J. W. Billingsley

OFFICERS PRESENT AS EX-OFFICIO MEMBERS OF THE HOUSE

W. D. Abbott	M. A. Blackstone
R. F. Birge	C. W. Seibert
N. B. Anderson	C. E. Radcliffe
C. V. Edwards	G. S. Atkinson
C. H. Flynn	L. V. Larsen
S. P. Leinbach	R. N. Larimer
R. M. Dahlquist	F. C. Coleman
J. E. Houlahan	H. W. Morgan

Minutes of the April 19 meeting of the House of Delegates were read and approved. The election followed and the following physicians were chosen:

President-Elect	E. F. Van Epps, M.D., Iowa City
Vice President	L. C. Pumphrey, M.D., Keokuk
Trustee	*S. P. Leinbach, M.D., Belmond
Speaker of the House of Delegates	*C. V. Edwards, M.D., Council Bluffs
Vice Speaker of the House	L. W. Swanson, M.D., Mason City
Delegate to the AMA	*D. F. Ward, M.D., Dubuque
Alternate Delegate to the AMA	*F. G. Ober, M.D., Burlington
Councilors: 2nd District	*J. E. Houlahan, M.D., Mason City
5th District	*G. E. McFarland, Jr., M.D., Ames
7th District	*C. E. Radcliffe, M.D., Iowa City
9th District	*George S. Atkinson, M.D., Oskaloosa

Dr. Van Epps, the president-elect, was invited to the rostrum and made the following statement:

I accept what only you, the House of Delegates, could give, the office of President-Elect of this Society. This allows me to continue the work I started in 1953 as councillor for the 7th District, and to use the same six principles which I chose as guideposts to help me in deciding a problem. I believe they are as appropriate today as yesterday and will continue to be useful:

* Re-elected at the 1959 Annual Meeting.

1. Principles and philosophies.
2. Methods of implementation.
3. Implications and alternatives.
4. Communication.
5. Cost of decision.
6. Decision.

Any controversy, or perhaps instead, any problem has its roots in a difference of opinion—basically involving principle or philosophy. If one can get to the root of the problem, there is no need to indulge in expediency, personalities or wishful thinking.

Once the problem is clearly outlined, defined, and understood, implementation to remove the problem is much easier, more direct and less traumatic. There are usually several methods which can be used to resolve any problem, all with some small, irritating, built-in feature. Each has its own implications and alternatives.

Where we usually fall down from here on to a decision is in communication—a lack of communication. Communication implies listening as well as talking. Communication is good, when you agree with me; it is bad when you disagree. It tends to wander and encompass irrelevant material. It takes time. It can be wearisome. It is often misunderstood, both intentionally and unintentionally. Good communication is essential to a decision.

What effect will our decision have on our relation to the community, our patients, the profession and the nation? Is it worth the cost? If the answer is YES, and is based on the principles I've outlined, then any criticism provides an opportunity to educate and instruct the uninformed. This latter is work unless it is "a labor of love."

This, I believe, the House of Delegates will do today.

Everything I've said has come from painful personal experience—perhaps more is coming. Consider it then as emphasizing and reiterating to me, the seriousness with which I view this office you have given me this day. I thank you.

Reference Committee Reports

The following reference committee reports were presented and approved by the House of Delegates.

THE BOARD OF TRUSTEES

The Board of Trustees convened as a Reference Committee at 8:30 p.m., Sunday, April 19, in Parlor C, Hotel Savery.

It considered the final paragraph of the report of the ISMS Fee Committee, appearing on page 62 of the House of Delegates HANDBOOK. The Fee Committee had suggested that the ISMS conduct necessary studies and investigations intended to eliminate discrepancies in the Iowa Unit Fee Index. Since this would involve the expenditure of ISMS funds, the Fee Committee requested that this matter be considered by the Board of Trustees.

The Board of Trustees met in open session and those in attendance included the Chairman of the ISMS Fee Committee. After a careful review of this proposal, the Board of Trustees agreed that perhaps a study of the Unit Fee Index would be appropriate in the near future, and requested the ISMS Fee Committee to provide suggestions as to how this study should be undertaken and an estimate as to the cost that might

be involved. The Chairman of the Fee Committee was asked to report the recommendations of his Committee concerning this study at an early meeting of the Board of Trustees.

Mr. Speaker, I move the adoption of this report.

WALTER D. ABBOTT, M.D.
H. E. FARNSWORTH, M.D.
R. F. BIRGE, M.D.
C. H. FLYNN, M.D.
J. W. BILLINGSLEY, M.D.
N. B. ANDERSON, M.D.
S. P. LEINBACH, M.D.

REPORTS OF OFFICERS

The Reference Committee on Reports of Officers, in executive session, considered the following matters which had been referred to it:

1. President's Address—The Reference Committee on Reports of Officers wishes to compliment Dr. Walter D. Abbott on the thoroughness of his report. Mr. Speaker, I recommend acceptance of this report.

2. Report of the Board of Trustees—The Reference Committee on Reports of Officers recommends that the last paragraph on page two of the Report of the Board of Trustees be stricken and that the following be inserted in lieu thereof: "In view of the increased cost of operation of the ISMS, it is recommended that the 1960 dues be increased \$5, to a total of \$80." Mr. Speaker, I recommend the adoption of the first three pages of this report, as amended.

3. Resolution No. 3—The Reference Committee on Reports of Officers considered the Union County Medical Society's resolution concerning reference committee members, and due to the fact that its subject was covered by the instructions from the Speaker of the House to the various reference committees, took no action and recommends no action. Mr. Speaker, I move the adoption of this portion of the report.

Mr. Speaker, I move the adoption of this report as a whole.

GEORGE PASCHAL, M.D.
D. O. MALAND, M.D.
R. M. DAHLQUIST, M.D.
L. C. PUMPHREY, M.D.
J. E. HOULAHAN, M.D.

LEGISLATION AND PUBLIC RELATIONS

The Reference Committee on Legislation and Public Relations met in open session at 2:30 p.m. on Sunday, April 19. The following Supplemental Reports and Resolutions were referred to it: (1) Supplemental Report of the Committee on Nursing Education and Service; (2) Supplemental Report of the Committee on Chiropractic; (3) Supplemental Report of the Committee on Paramedical Services; (4) Supplemental Report of the Committee on Legislation; (5) Resolution No. 5 on Vexation Litigations, which title was changed from "Malpractice Suits" on request of the author; (6) Resolution No. 10 the Vendor Payment Program portion of the Blue Shield 65 Plan and Vendor Program Resolution; (7) Resolution No. 12 concerning Increase in Salary for Dr. Jeanette Dean-Throckmorton; (8) Resolution No. 14 instruction of AMA Delegates in regard to nationwide public information program; and (9) Resolution No. 17 to seek permission for

physicians' cars to exceed speed limit in emergencies.

The *Supplemental Report of the Committee on Nursing Education and Service*. This very vital report is worthy of serious consideration and the Committee recommends that the report be referred to an appropriate committee or committees and that they deliberate with representatives of the Iowa Nursing Association, the Iowa Hospital Association, and the State Department of Education to give further study to its possibilities. Mr. Speaker, I move the acceptance of this portion of the report.

Supplemental Report of the Committee on Chiropractic. Your Reference Committee recommends approval of this report. Mr. Speaker, I move the acceptance of this report.

Supplemental Report of the Committee on Paramedical Services having to do with physiotherapists. Your Reference Committee recommends approval of this report. Mr. Speaker, I move the acceptance of this report.

Supplemental Report of the Committee on Legislation. Although each paragraph in this report is of vital interest to every physician, this Supplemental Report is somewhat lengthy. The Committee wishes to read that portion of the Report having to do with the Forand Bill and the County Medical Examiner Bill.

"Forand Bill. We can expect hearings to be conducted across the nation by a subcommittee of the Congress on the subject of health care for the aged and others of modest means and an investigation into the costs of medical care in general. We are hopeful the Forand Bill will not be reported out of the House Ways and Means Committee this year. However, the stage is set for the real 'push' in 1960, a presidential election year. It must be kept in mind that the Social Security Act is seldom left intact in an election year.

"This bill would provide 'free' hospitalization, nursing home care and surgical benefits for over 13,000,000 recipients of Social Security age 65 or over at an initial cost of about \$2 billion a year. Those who have been deluded into thinking that this bill is 'merely for the aged' have not read the testimony of Mr. Forand, himself, before the House Ways and Means Committee on June 16, 1959, to wit: 'The fact is that the ultra poor, if I may put it that way, the indigents and the wealthy are able to provide themselves with those services (hospitalization and surgical care) because charity takes care of the indigent and the wealthy are able to pay for it. It is that middle income group, that in-between group, that is suffering and in many instances have to postpone hospitalization or surgical treatment. I have voluminous files . . .'

"If the Forand Bill should pass, the next step is to extend it to the 80,000,000 persons of all ages under Social Security and the last and FINAL step is to extend it to the 'have-nots,' or rest of the entire population.

"Thus, all the stops will be pulled out in 1960; the battle lines have not only been drawn but the battle has begun and time is of the essence. Although some physicians may feel the battle is already lost with too little ammunition being delivered too late, the majority feel they must continue fighting this political menace rather than surrender the time-proven private practice of medicine which has shown such great benefit to their patients.

"Only one course of action is deserving of the necessary public support to prevent powerful pressure

groups and certain elements of Congress from passing the bill in 1960: Organized medicine in conjunction and cooperation with hospital groups, Blue Cross and Blue Shield, commercial insurance companies and many others, must continue to offer proof positive that it is willing, ready and able to provide and/or support improved methods of financing health care for the people of this nation on a voluntary basis, within their ability to pay. Any other approach not having the public interest in mind invites public condemnation and subsequent elimination of the private practice of medicine within the very near future."

This is the end of this portion of the report.

The Committee also thought it advisable to read that portion of the report having to do with the County Medical Examiner Bill.

"This new law provides that the examiner shall be either a doctor of medicine or an osteopath who shall be appointed by the county board of supervisors from names submitted by the respective organizations. Both the ISMS and IOA found it necessary to make pledges that they would encourage submission of these names so as to avoid vacancies. It is the hope of your committee that every county medical society will fulfill this pledge."

Mr. Speaker, I move the acceptance of this report.

Reference Committee Report on *Vexation Litigations* by Marion County. This Committee recommends that this resolution be referred to the Medico-Legal Committee for study and ultimate report to the Executive Council. The Committee is struck with the sincerity of this resolution and believes that every effort should be made to accomplish legislation that would discourage all insincere and vicious nuisance litigations. Mr. Speaker, I move the adoption of this recommendation.

Next, as regards the *Vendor Payment Program* resolution that has been submitted by Marion County. As physicians championing the cause of a free enterprise system in opposition to a welfare state, we are suspicious of and opposed to the allocation of direct or indirect federal funds for private medical care. Today we stand almost alone as champions of a philosophy that is all but dead. We are striving to alert the people to the impending doom which the majority apparently regard as a utopia. Socialism does not threaten us; it had already partially engulfed us.

The majority of this House of Delegates seems opposed to intervention of a third party in the medical atmosphere. Specifically, the Society objects to the Vendor Payment Program because federal funds are administered at a state level with direct payment to the physician. This is pure unadulterated socialized medicine—a monster to all of us. The monster is the federal government.

Now, acceptable to all of us would be the allocation of these funds to the county, to the patient, or possibly to private insurance carriers. Where is the monster now? The position of the federal government has not changed. Is the state government also a monster? Yes, a lesser one, but nevertheless still a monster. By projection, even the county and city become diminutive monsters. For that matter any intermediary is potentially evil, the difference being only one of degree.

The dollar payment for individual care is the same dollar whether it comes from federal, state, county or city government, from an insurance company or from the patient himself. Our primary function is the care of the patient. Our responsibility is to the patient and

not to the intermediary. The objection to the intermediary is predicated on principle and the principle is qualitatively the same regardless of the intermediary.

Your Reference Committee pondered the advisability of projecting a resolution on principle that, if acceptable, would commit the members of this Society to a position of refusing to accept any or all funds from an intermediary and especially from any government agency. Such a stand would not have been to refuse medical care for the beneficiary but to refuse payment from one other than the patient. This would mean an end to such programs as county welfare, ADC, Aid to the Blind, Old Age Assistance, Medicare, Veterans, Indian Affairs, etc., as presently administered. A sampling of opinion from representative doctors in an open session of the hearing indicated that we probably were not prepared, nor willing, to take this stand.

On February 22, 1959, the House of Delegates instructed the Executive Council through an appropriate committee to work with the Department of Social Welfare and the state legislature in negotiating a system whereby the program could be conducted in a manner which insures the maximum local control, or that funds be allocated to private insurance systems for coverage of the involved individuals.

Reference is made to the Supplemental Report of the Committee on Legislation, which defines the action taken by this committee in the consummation of this directive.

"Your committee"—that is the Legislative Committee—"has found, in brief, that under the federal law a single state agency must still retain supervisory authority even though the ISMS were to be successful in amending the several sections of the Iowa Code to give political subdivisions 'administrative duties' as permitted by the federal law. The present Iowa program provides for near autonomy by the county boards of social welfare in that the county boards, not the state boards, determine eligibility for care, audit bills, pass on any irregularities, and so on. It would appear that, under the federal law, the change to county 'administration' would not solve the complexities involved and might possibly result in increasing those complexities without decreasing federal participation, monetary and otherwise. The matter of seeking possible changes in the Iowa enabling act was considered at this late date in the legislative session and indications were that any such attempts would be futile at the present time.

"It appears that the federal law as amended in 1958 does provide for the possibility for expenditures for insurance premiums for medical or other type of remedial care under the vendor payment program. Following the meeting of the 1959 House of Delegates, the Legislative Committee expects to continue exploration of this subject with the Social Welfare Department, Blue Shield and commercial insurance companies."

That ends the report of the Committee on Legislation.

It is the opinion of this Reference Committee that the Legislative Committee has and is attempting to fulfill this directive and that insufficient time has been allotted for free study of the program. The Committee recommends:

(1) That further action by this House of Delegates on the Vendor Payment Program be withheld until further study and negotiation have been completed. However, we support the action of the special meeting

of the House of Delegates in February, 1959, in condemning all Vendor Payment Programs in principle but withhold final judgment on acceptance of this or any other plan until such time, and at such times, as further information becomes available. In the meantime, component medical societies and/or individual physicians may enter into such negotiations with their county boards of supervisors, or the individual patient, as precedent, circumstance and conscience dictate. Mr. Speaker, I move the adoption of this portion of this report.

(2) The Committee recommends that the Delegates to the AMA convey this problem to the parent body for investigation and guidance at a national level. Mr. Speaker, I move the adoption of this portion of the report.

Reference Committee Report on *Increase in Salary of Dr. Jeanette Dean-Throckmorton* submitted by Webster County. Your Reference Committee recommends approval of this resolution and believes that the Legislative Committee has exerted every effort to accomplish this salary increase. Mr. Speaker, I move the adoption of this resolution.

Reference Committee Report on *Instruction to AMA Delegates* regarding nationwide public information program. This Committee recommends approval of this motion. However, the Committee reminds the House that the profession cannot buy public relations at national, state or local levels. Each individual physician is his own best or worst program. The resolution, however, wisely points up the desirability of a broad program of enlightening the public on many controversial subjects concerning medical care. Mr. Speaker, I move the adoption of this portion of the resolution.

The Committee further recommends that the State Society poll the membership prior to June 1 to ascertain how much physicians would be willing to contribute to such education on a state or national level. Mr. Speaker, I move the adoption of this portion of the report.

Resolution concerning permission for *physicians' cars* to exceed speed limits in emergency submitted by Pocahontas County. The Reference Committee believes that request for blanket authority for legal protection in violation of existing laws is in large measure unnecessary and that such authority would be prone to abuse. It is believed that in true emergencies proper escort assistance would always be available on notification by the physician to proper authority. Mr. Speaker, I move that this resolution be rejected.

Your Reference Committee has reviewed the actions of the Legislative Committee, the staff, and our legal counsel, and find that they have performed an outstanding service. Tireless effort and many precious hours have been devoted to the support of legislation of vital importance to Iowa physicians and especially to the Iowa public. Your Reference Committee wishes to initiate an expression of gratitude to these men and to label their efforts "splendidly done." Mr. Speaker, I so move.

Mr. Speaker, I move the adoption of the report as a whole.

O. D. WOLFE, M.D., *Chairman*
CRAIG D. ELLYSON, M.D.
K. E. LISTER, M.D.
E. A. LARSEN, M.D.
C. A. TRUEBLOOD, M.D.

MISCELLANEOUS BUSINESS

Mr. Speaker and members of the House of Delegates, your Reference Committee on Miscellaneous Business met and conducted hearings on the business assigned to it. The Committee is grateful and expresses its thanks to those present for their opinions and assistance to the Committee in formulating this report.

The first order of business was the matter concerning the communication from the Iowa Society of Osteopathic Physicians and Surgeons. Several members of the Osteopathic Committee were present and outlined to the Committee pertinent facts of the AMA deliberations concerning the general osteopathic problem and the relationship of doctors of medicine with the group. The Committee was further enlightened by the opinions expressed by our legal counsel, Mr. Robert Throckmorton. Your Committee was informed that the Judicial Council of the American Medical Association will give a report to the House of Delegates of that body at the June meeting concerning further study of the osteopathic problem. It therefore recommends that any specific action be delayed until after that report is made and then refer it to our Judicial Council for specific action. It recommends therefore that an acknowledgement of the letter be made, advising the Osteopathic Society of our action. Mr. Speaker, I move the adoption of this portion of the report.

The Supplemental Report of the Committee on Patient Care was discussed. This Committee, for the reasons outlined in this Supplemental Report, recommends that this Committee be discontinued. Your Reference Committee agrees that the wishes of this special committee be granted and further that this House of Delegates extend to the Committee its thanks and appreciation for past services. Mr. Speaker, I move the adoption of this portion of the report.

The problem of adequate medical care in Iowa, as presented by Dr. Norman Nelson, Dean of the Medical School, State University of Iowa, was reviewed and it was considered by the Committee to be a factual report and a very enlightening one. The Committee wholeheartedly recommends that this report be studied in detail by the members of the House of Delegates. It was the expressed opinion that this problem of adequate medical care could be somewhat alleviated if local medical societies would encourage and establish programs to induce good young men and women to enter the field of medicine. It is further recommended that the Iowa State Medical Society expand its doctor placement program and offer assistance to the various communities in solving their placement problems. This would considerably further our public relations locally. The Committee recommends that the hospitals of Iowa re-evaluate their intern and residency programs and increase, if possible, the number of internships and residencies and improve the quality of these training programs with the idea of attracting more doctors to the state. The Committee feels that with a bit more impetus a great service to the people of Iowa would result if such programs are put into effect. Mr. Speaker, I move the adoption of this portion of the report.

The next item of business concerned the Supplemental Report of the Sub-Committee on Interprofessional Activities. This Committee is to be congratulated on the positive approach that it has taken in the development of a Code of Understanding between the physician and the pharmacist. Your Reference Committee

feels that a great step in cementing the doctor-pharmacist relationship has been made, as manifested by the fact that the Iowa Pharmaceutical Association approved this Code at its annual meeting in February of this year. Your Committee, however, offers two minor changes in the Code. In the section of the Code prepared by the Iowa Pharmaceutical Association, paragraph 5, which now reads: "The pharmacist shall follow exactly the prescriber's directions in the refilling of a prescription. If no refilling instructions are contained on the original prescription, the pharmacist will not, and according to law cannot, refill such prescription without the authority of the prescriber. Such authority can be obtained orally." should be changed by the insertion of the phrase, "There should be no substitution of ingredients by the pharmacist and that he shall follow exactly the prescriber's directions in the refilling of a prescription" and to the conclusion of the paragraph. The second change in the Code, as prepared by the Iowa State Medical Society, paragraph 1, is the deletion of the phrase, "that out of respect to the profession of pharmacy and service to the patient." It therefore should read: "According to the American Medical Association's Code of Ethics, 'it is not unethical for a physician to prescribe or supply drugs, remedies, or appliances as long as there is no exploitation of the patient.' The Iowa State Medical Society is cognizant of this provision in medical ethics, but believes drug dispensing by a physician should be discouraged if adequate pharmaceutical service is readily available." Mr. Speaker, I move the adoption of this portion of the report.

The Supplemental Report of the Doctors' Assistants Advisory Committee was next considered by your Reference Committee. This Advisory Committee and staff are to be commended for its positive approach to the establishment of a Placement Bureau and for the proposed training course. Your Committee feels that this is a further step in the development of good public relations. Mr. Speaker, I move the adoption of this portion of the report.

The presence of a member of the Public Health Committee gave substantial reasons for the last paragraph on the Committee's report on Public Health, appearing in the Handbook on page 47, in which it makes a proposal: "The Committee recommends to the Iowa State Medical Society that efforts be made to eliminate the compulsory premarital blood examination for syphilis. It further suggests that the Society strongly promote premarital counseling by the family physician. The Committee bases its position on the fact that the law is not accomplishing its intended purpose, since very few cases of syphilis have been detected by that means, and on the grounds that it constitutes an unnecessary economic burden on the public. The Committee does advocate the continuance of prenatal blood examinations." Your Reference Committee is in agreement with the recommendations of the Public Health Committee. Mr. Speaker, I move the adoption of this portion of the report.

The Supplemental Report of the Committee on Public Health pertaining to the establishment of a Medical Milk Commission in Iowa and its attached resolution was studied. This resolution reads: "Whereas, the Committee on Public Health recognizes that the organization of a Medical Milk Commission in Iowa would encourage the production of better quality milk and therefore be beneficial to the people in the state, and

Whereas, several of the dairies in the state have indicated a definite interest in the establishment of such a Commission; now, therefore be it Resolved, that this House of Delegates authorize the Iowa State Medical Society to take the lead and cooperate in the establishment of a Medical Milk Commission in Iowa; said Commission to be: (1) Established in accordance with the organizational structure approved by the Committee on Public Health, (2) Limited to the certification of only pasteurized milk, and (3) Operated in accordance with the rules and regulations of the American Association of Medical Milk Commissions." Your Committee felt that this Supplemental Report explained the need for the resolution and recommends to this House of Delegates that the Supplemental Report be accepted and further that the resolution be adopted. Mr. Speaker, I move the adoption of this portion of the report.

Mr. Speaker, I move the adoption of this report as a whole. The chairman wishes to express his thanks to the members of his Committee and the staff secretary for their assistance in the preparation of this report.

D. F. WARD, M.D., *Chairman*

H. E. STROY, M.D.

R. A. FOX, M.D.

R. J. PETERSON, M.D.

W. W. TAYLOR, M.D.

INSURANCE AND MEDICAL SERVICE

Your Reference Committee on Insurance and Medical Service took its task realizing fully the existence of a minority opinion with respect to many items referred to it. A hearing was held at which every doctor who wished talked as many times and as long as he wished. In addition, interviews were conducted with many persons whose views the Committee felt were necessary to an intelligent recommendation.

With respect to the Supplemental Report of the Committee on Group Insurance, your Reference Committee recommends that the Committee on Group Insurance be commended for its intensive study of the problem and further recommends that the hospital insurance plan as outlined to you on Sunday be adopted and that enrollment be undertaken as soon as practicable.

I move the adoption of this section of the report.

With respect to Resolution No. 2, the Committee feels that no action is necessary on this resolution. Your Committee wishes to remind the membership that the pages of the JOURNAL are and have been open to both sides of any issue.

I move the adoption of this section of the report.

With respect to Resolution No. 16, your Committee recommends the rejection of this resolution as worded, and recommends that the Fee Committee be charged with the responsibility of setting fee schedules for contracts calling for lower than normal fees and that in so doing account be taken of the higher operating costs of radiology and pathology.

I move the adoption of this section of the report.

The Committee has considered all the remaining resolutions pertaining to the Senior 65 and middle income contracts and recognizes that this program might seem to have been hasty and would suggest in the future that any programs of such magnitude be allowed a maximum amount of time for state-wide dissemination of information and study and that the members of the State Society be admonished to keep themselves informed of things that are going on by reading all

the communications which come to them and that closer contact be maintained between individual doctors and their ISMS delegates; but in the light of the present situation with respect to public relations, the legislative crisis and the obligation of doctors to their patients, the Committee can do no other than to recommend the following:

That the Senior 65 program be considered as a pilot program for a period of two years since that length of time is a minimum required for valid statistical data and experience; that at the end of one year Blue Shield will give a progress report to this House of Delegates as to the functioning of this program and that at the same time this House of Delegates, acting on behalf of the participating physicians, will present a complete report to Blue Shield on modifications and reforms which have become necessary in the light of doctor experience with the program; and that at the end of two years there be a complete re-evaluation of the program and decision made as to its continuance.

The complaints against the two contracts, as expressed by resolution and at the extensive hearings, are summarized by the Committee as follows:

1. That the Senior 65 and middle income contracts were presented and approved without full discussion and understanding by the membership of the State Society.

2. That the programs were too hastily devised and not enough time was allowed for consideration.

3. That some members appear definitely opposed to full service coverage in any contract.

The objections are expressed in Resolutions Nos. 1, 4, 11, 13 and 15.

In answer to these objections, while in general there seems to be some merit to the idea that the complete membership was not completely informed, the situation both national and local made rapid implementation desirable. There seems to be a wide discrepancy in the feelings of the various county societies in that some county societies were able to hold meetings, using the information provided to the delegates, and come to a consensus prior to the February 22, 1959, meeting. Further, in keeping with the position of the ISMS as a leader and pioneer in aggressive and progressive proposals to better the well being of the public and the public image of organized medicine, this Committee must agree that the haste with which this program was developed, passed and put into operation was warranted.

I move the adoption of this section of the report.

The Committee is fully aware of the two opposing thoughts, and urgently and earnestly admonishes the membership to give this program a fair trial. Realizing that potentially some segments of the profession feel they will be injured, we recommend that the House of Delegates require the Blue Shield Board of Directors to make at once whatever changes are necessary in its procedure so that a participating physician, rather than being forced to continue for a year in a disadvantageous position, may resign on thirty days' notice.

I move the adoption of this section of the report.

With respect to Resolution No. 1 from Cerro Gordo County calling for the reversal of the special meeting action and consideration of the two contracts individually, your Committee recommends that it be rejected.

I move the adoption of this section of the report.

With respect to Resolution No. 4 from Dallas-Guthrie

County opposing full service for the middle income group and favoring deductible insurance, your Committee reminds the membership of this House that enabling legislation specifically requires Blue Shield to offer full service and at the same time feels that Blue Shield should continue exploring the possibility of offering a deductible plan. Therefore, your Committee recommends the rejection of the resolution's opposition to full service, and recommends the exploration of deductible features.

I move the adoption of this section of the report.

With respect to Resolution No. 8 by Scott County calling for proration of the standard Blue Shield fees in low fee schedule policies, your Committee is advised that such a procedure would not be acceptable to the Insurance Commissioner. Your Committee further reminds you that these preliminary low fees can be up-graded if and when fiscal experience warrants. It is recommended therefore that Resolution No. 8 be rejected.

I move the adoption of this section of the report.

With respect to Resolution No. 9 by George H. Pester, M.D., opposing any increase in the present full service limits without instructions by a balloted majority of the entire membership of participating physicians, your Committee recommends rejection since it feels at this time no useful purpose would be served by a ballot of the participating physicians.

I move the adoption of this section of the report.

Taking up now Resolution No. 10, by Marion County expressing opposition to the Senior 65 program, your Committee feels that this resolution required no action and it was noted as a matter of record.

I move the adoption of this section of the report.

With respect to Resolution No. 11 by Cerro Gordo County proposing the complete withdrawal of Blue Shield from full service insurance contracts, your Committee realizes that there are some of our members who object to full coverage policies. Certainly this is a controversial point. Further use of this type of insurance coverage represents, these members feel, a threat to the entire philosophy of traditional fee-for-service medicine. The enabling legislation making possible Blue Shield at its inception makes necessary the offering of full coverage to some segment of the population in all contracts written by Blue Shield. Blue Shield has great value to the medical profession, since it gives us a powerful voice in the medical insurance field. It is a device by which we can control and guide future developments in this field. For these reasons, your Committee recommends rejection of Resolution No. 11.

I move the adoption of this section of the report.

Turning now to Resolution No. 13 by Webster County calling for the reconsidering of the February action of this House, it is the recommendation of your Committee that this resolution should be rejected for reasons equally applicable and heretofore stated.

I move the adoption of this section of the report.

With respect to Resolution No. 15 by Polk County calling for elimination of the middle income contract program, your Committee rejects this resolution because it feels the middle income program along with the Senior 65 constitutes the most forward looking step that Iowa doctors have taken since Blue Shield itself was originated and that it comes as an answer to a demand of the people which, if not met voluntarily, will be met by government.

I move the adoption of this section of the report.

Taking up now Resolution No. 18 by Pocahontas County calling for reaffirmation of the February 22, 1959, Blue Shield action of the House and pleading for constructive guidance within rather than negative criticism from without, your Committee recommends the adoption of this resolution modified in line with the above recommendations referring to other resolutions dealing with the same program.

I move the adoption of this section of the report.

Your Committee feels a great responsibility in the decisions that it has found itself logically required to recommend, and recognizes and regrets the difference of opinion which has been expressed by sincere men of good will. It believes that it has recommended modifications which should allow those who oppose it to give it a fair trial without risk of prolonged individual hardship. We would plead with the entire membership to present to the world a solid and united front, supporting that which we feel will lead to improved and better patient care and opposing anything which we feel will jeopardize the quality of care to the sick which, let us remember, is our primary interest and function.

I move the adoption of this section of our report.

I move the adoption of this report as a whole.

C. W. SEIBERT, M.D., *Chairman*
M. O. LARSON, M.D.
W. D. HAUF, M.D.
G. E. MONTGOMERY, M.D.
D. C. KOSER, M.D.

ARTICLES OF INCORPORATION AND BY-LAWS

The Reference Committee on Articles of Incorporation and By-Laws considered that portion of the supplemental report of the Board of Trustees concerned with Iowa State Medical Society representation to the American Medical Association, especially insofar as alternate delegates are concerned. It approves this portion of the supplemental report with certain clarifying amendments. To effect the proposals of the Board of Trustees, the Reference Committee recommends that the House of Delegates order:

(1) That Article IV, Section 2, of the Articles of Incorporation of the Iowa State Medical Society as amended, be amended by striking therefrom the fifth complete sentence thereof and adding in lieu thereof the following two sentences:

"The delegates to the American Medical Association shall be elected in such numbers and for such terms as the By-Laws of the American Medical Association may prescribe. Alternate delegates to the American Medical Association shall be elected in such numbers and for such terms as the By-Laws of the Iowa State Medical Society may prescribe."

Mr. Speaker, I move the adoption of this section of our report.

(2) That Article IV, Section 16, of the Articles of Incorporation of the Iowa State Medical Society as amended, be amended by inserting therein, after the first complete sentence thereof, the following:

"Effective January 1, 1962, the alternate delegate to the American Medical Association shall become a non-voting member of the Executive Council."

Mr. Speaker, I move the adoption of this section of our report.

(3) That Chapter III, Section 6, of the By-Laws of

the Iowa State Medical Society as amended, be amended by striking therefrom the whole of said Section 6 and substituting in lieu thereof the following:

"It shall elect delegates to the House of Delegates of the American Medical Association in such numbers and for such terms as the Articles of Incorporation and By-Laws of the American Medical Association may provide.

"At the annual meeting of the Iowa State Medical Society in 1960, it shall elect to the House of Delegates of the American Medical Association two alternate delegates whose terms shall expire on December 31, 1961. At the annual meeting of the Society in 1961, and each two years thereafter, it shall elect one alternate delegate to the House of Delegates of the American Medical Association."

Mr. Speaker, I move the adoption of this section of our report.

(4) That Article IV, Section 8, of the Articles of Incorporation of the Iowa State Medical Society as amended, be amended by adding thereto the following:

"Effective January 1, 1962, he shall in the event one or more of the regular delegates or the alternate delegate to the House of Delegates of the American Medical Association are unable or unwilling to attend a meeting of such House of Delegates, appoint a member of the Executive Council to serve as alternate delegate at such particular meeting."

Mr. Speaker, I move the adoption of this section of our report.

The Reference Committee considered the supplemental report of the Committee on Articles of Incorporation and By-Laws and approves it with two revisions, namely:

(1) That the typographical error in the third proposal made by the Committee on Articles of Incorporation and By-Laws beginning "*Resolved*" be corrected by changing Roman numeral IV to Roman numeral VI, so that the resolution reads as follows:

"*Resolved*, that Article VI, Section 1, of the Articles of Incorporation of the Iowa State Medical Society as amended be amended by striking therefrom the fifth complete sentence thereof and substituting the following:

"The officers of the Society as defined in these Articles and the past presidents of the Society for the immediate five previous years shall be, ex-officio, members of the House of Delegates without the right to vote unless that officer or past president be at the same time a duly elected delegate."

Mr. Speaker, I move the adoption of this section of our report.

(2) That the section of the supplemental report of the Committee on Articles of Incorporation and By-Laws pertaining to Article III, Section 4, of the Articles of Incorporation be changed to read as follows:

"*Resolved*, That Article III, Section 4, of the Articles of Incorporation of the Iowa State Medical Society as amended, be amended by striking therefrom the second sentence and substituting in lieu thereof the following:

'Associate members shall be exempt from the payment of dues, and may be exempt from the payment of dues in the year elected if recommended by the Judicial Council, but shall receive the publications of the State Society.'

Mr. Speaker, I move the adoption of this section of our report.

The other one of the changes in the Articles of In-

corporation of the Iowa State Medical Society that was recommended by the Committee on Articles of Incorporation and By-Laws in its supplemental report, the Reference Committee approves without change. It is as follows:

"*Resolved*, That Article III, Section 3, of the Articles of Incorporation of the Iowa State Medical Society as amended be amended by striking therefrom the last sentence and substituting in lieu thereof the following:

'Life Members shall be accorded all the privileges of Active Members but shall be exempt from the payment of dues beginning January 1 following their election to Life Membership.'

Mr. Speaker, I move the adoption of this section of our report.

The Reference Committee considered the "Proposed Substitute" version of Resolution No. 7 introduced by the Judicial Council concerning the Nominating Committee. The Reference Committee recommends that the resolution be amended to read as follows:

"*Resolved*, That Chapter IV, Section 2, of the By-Laws of the Iowa State Medical Society as amended, be amended by striking therefrom the whole of said Section 2 and substituting in lieu thereof the following:

'Not later than February 15 of each year there shall be elected a Committee on Nominations consisting of eleven delegates, one from each Councilor District. It shall be the duty of the Committee to hold meetings, including an open meeting, at which the interests of the Society and the profession of the state shall be carefully considered. The open meeting shall be held not later than March 5, and notice of the meeting shall be sent to all members of the Society at least ten days prior to the date of the meeting. Said notice shall include a list of the names of the Nominating Committee, together with an informative statement as to vacancies to be filled. Not later than March 10, the Committee shall report its official ticket containing the names of one member as a candidate for each vacancy in the office of Councilor, and, when practicable, two or more members as candidates for all other offices. This ticket shall be sent to every member of the Society not later than twenty days previous to the first session of the annual meeting of the House of Delegates. Two candidates for the same office shall not be named from the same county.'

The Committee recommends that Resolution No. 7, as amended, be adopted.

Mr. Speaker, I move the adoption of this section of our report.

The Reference Committee considered Resolution No. 6 introduced by the Story County Medical Society concerning making the Dean of the State University of Iowa College of Medicine a member of the Iowa State Medical Society House of Delegates. The Committee recommends that the words "without vote" be added to the last sentence of the resolution, and that Resolution No. 6, as amended, be adopted.

Mr. Speaker, I move the adoption of this section of our report.

Mr. Speaker, I move the adoption of this report as a whole.

J. M. LAYTON, M.D., *Chairman*
V. W. PETERSON, M.D.
C. P. HAWKINS, M.D.
G. W. BENNETT, M.D.
P. M. CMEYLA, M.D.

Appropriate resolutions were approved by the House of Delegates authorizing proper officers of the ISMS to file amendments to the Articles of Incorporation and By-Laws as approved by the House of Delegates.

GENERAL PRACTITIONER OF THE YEAR
AWARD

The Reference Committee on the General Practitioner Award would like to commend each candidate nominated for the award. The task of selecting the Outstanding General Practitioner for 1959 was most difficult because of the excellent qualifications of each candidate.

The Committee recommends that the House of Delegates elect Doctor William B. Chase, of Des Moines, as Iowa's Outstanding General Practitioner of the Year. The Committee further recommends that Doctor Chase be Iowa's candidate for the National Outstanding General Practitioner of the Year Award, to be presented by the American Medical Association.

R. L. KNIFFER, M.D., *Chairman*
R. C. GUTCH, M.D.
C. W. MAPLETHORPE, SR., M.D.
G. H. KEENEY, M.D.
J. H. CODDINGTON, M.D.

The House of Delegates approved Des Moines as its convention site for 1961.

The House of Delegates approved the perennial reso-

lution, introduced by Dr. Oscar Alden, that the House of Delegates instruct the secretary to write a note of thanks to each of the Annual Meeting exhibitors who assist each year in putting on the Iowa State Medical Society Annual Meeting.

A motion was approved by the House of Delegates that, to the extent possible, copies of reference committee reports should be made available to the members of the House of Delegates at future meetings, immediately upon the convening of the Wednesday morning session.

The House of Delegates approved a motion commending the members of reference committees and staff members of the ISMS for the excellence of their handling of the Society's business affairs.

A motion was approved in the form of a commendation recognizing the outstanding service of Dr. W. D. Abbott as president during the past year. The motion included authorization for the Board of Trustees to prepare a suitable testimonial statement on behalf of the House of Delegates and officers of the Society, for Dr. Abbott's permanent personal possession.

The House of Delegates extended its thanks to Blue Shield for providing the sergeants at arms, Messrs. Morris Bandy, Kenneth Clark and Merle Libby. Also it thanked two ISMS staff members for their assistance in carrying out the business of the House.

The House of Delegates was adjourned by the Speaker at 2:35 p.m.

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Samuel P. Leinbach, Belmond	1962*

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Robert N. Larimer, Sioux City	January 1, 1961
Francis C. Coleman, Des Moines	January 1, 1961

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THE JOURNAL

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Cressler, Frank E., Churdan
Cretzmeyer, Francis X., Emmetsburg (L.M.)
Crew, Arthur E., Marion (L.M.)
Crew, Philip I., Cedar Rapids
Crocker, Mary Ann, Manchester
Cromwell, James O., Des Moines
Cross, Donald L., Boone
Cross, Kenneth R., Iowa City
Crow, George B., Burlington (L.M.)
*Crowley, Daniel F., Des Moines
Crowley, Daniel F., Jr., Des Moines
Crowley, Paul J., Davenport
Croxdale, Edward L., Villisca
Culbertson, Robert A., Des Moines (A.M.)
Culp, David A., Iowa City
Cunnick, Paul C., Davenport
Cunningham, Glenn D., Davenport
Cunningham, Melvin B., Norwalk
Curtis, Dean, Chariton
Cusick, George W., Davenport
Dagle, Charles L., Fort Dodge
Dahl, Harry W., Des Moines
Dahlbo, John E., Sutherland
Dahlquist, Ralph M., Decorah
Dalager, Robert D., Ottumwa
Dalbey, Glenn M., Traer
Dale, Henry F., Council Bluffs
Danielson, May, Clinton
Dankle, Willis K., Cresco
Dannenbring, Forrest G., Fort Dodge
Daut, Richard V., Davenport
Davey, William P., Sioux City
Davidson, Thorald E., Mason City
Dawson, Emerson B., Fort Dodge
Dawson, Robert J., Graettinger
Day, Philip M., Oskaloosa (L.M.)
Deakins, Martin L., Logan
Dean, Abbott M., Council Bluffs
Dean, William F., Osceola (L.M.)
Deaton, Helen J., Iowa City
DeBacker, Leo J., Jr., Iowa City
Decker, Charles E., Davenport
Decker, Henry G., Des Moines
Decker, Jay C., Sioux City (L.M.)
DeGowin, Elmer L., Iowa City
deGravelles, William D., Des Moines
DeLashmutt, Edward J., Fort Madison
Demaree, Chester, Lacona (L.M.)
De Meulenaere, John C., Grinnell
Dempewolf, Robert D., Bellevue
Dennert, Walter G., Boone
Denser, Clarence H., Jr., Des Moines
Deranleau, Robert F., Perry
DeShaw, Earl H., Monticello
Des Marias, Varina, Grundy Center
Devine, Arthur W., Waterloo
Devine, James S., Whittemore
Deweese, Frank L., Keokuk
Dewey, Jay R., Schaller
De Young, Ward A., Glenwood
Diamond, Bernard, Waterloo
Dick, Fred Jr., Waterloo
Dickens, James H., Des Moines
Diddy, Keith W., Perry
Dieckmann, Merwin R., Waterloo
Dierker, LeRoy J., Fort Madison
Dimsdale, Lewis J., Sioux City
Dingman, Marshall E., Urbana (L.M.)
Ditto, Boyd L., Burlington
Dixon, John B., Mason City
Dodge, Lynn Q., Ames
Doane, Grace O., Des Moines (A.M.)
Dohnalek, Donald W., Harlan
Dolan, Albert M., Waterloo
Dolan, Thomas R., Monticello
Dolmage, George F., Buffalo Center (L.M.)
Donahue, James C., Jr., Davenport
Donohue, Edmund S., Sioux City
Donlin, Robert E., Harlan
Donnelly, Madeline M., Des Moines
Doolittle, Russell C., Clearwater, Florida (L.M.)
Doran, John R., Ames
Dorner, Ralph A., Des Moines
Dorsey, Thomas J., Fort Dodge
Doss, W. Gordon, Cresco
Doss, W. Norman, Leon
Douglas, Clarence E., Belle Plaine
Douglas, Herbert J., Griswold
Down, Howard I., Sioux City
Downey, Eugene M., Guttenberg
Downing, Arthur H., Des Moines
Downing, John S., Cedar Rapids
Downing, Leroy M., Cedar Rapids (L.M.)
Downing, Wendell L., LeMars
Downs, Vernon S., Ottumwa
Dressler, John B., Ida Grove
Drew, Edward J., Des Moines
Drier, William C., Waterloo
Driver, Richard W., Waterloo
Drown, Roger E., Fort Dodge
Dubansky, Marvin H., Des Moines
Duell, Rudolph H., Des Moines
★Duffie, Edward R., Port Hueneme, California
Dulin, Evelyn H., Iowa City
Dulin, John W., Iowa City
Dulin, Tarana J. G., Iowa City (L.M.)
Duling, Raymond J., Sioux City
Dulmes, Abraham H., Klemme
Duncan, Ellis, Oskaloosa
Dunlay, Robert W., Iowa Falls
Dunlevy, James H., Fairfield
Dunn, Dale E., Estherville
Dunn, Francis C., Cedar Rapids
Dunn, Robert C., Fort Dodge
Dunner, Ada, Des Moines
Dusdieker, Stanley W., Des Moines
Dutton, Dean A., Van Horn
Dvorak, Joseph E., Sioux City
Dwyer, Bernard B., Clinton
Dwyer, Robert E., Clinton
Dyson, James E., Phoenix, Arizona (A.M.)
Dyson, Ralph E., Des Moines
Eastburn, Harvey B., Burlington
Eaton, Robert C., Clarion
Ebinger, Edward W., Ottumwa
Echternacht, Arthur P., Fort Dodge
Eckart, Emile P., Fort Dodge
Eckstein, John W., Iowa City
Edelman, David L., Des Moines
Edgerton, Winfield D., Davenport
Edgington, Frank D., Spencer
Edwards, Charles C., Des Moines
Edwards, Charles V., Council Bluffs
Edwards, Charles V., Jr., Council Bluffs
Edwards, John F., Clinton
Edwards, Ralph R., Centerville
Egan, Thomas J., Bancroft
Egbert, Daniel S., Fort Dodge
Egermayer, George W., Elliott (L.M.)
Eggleson, Alfred A., Burlington
Ehlers, Gunther, Des Moines
Ehrenhaft, Johann L., Iowa City
Eicher, Charles R., Iowa City
Eiel, John O., Osage
Eisenach, John R., Shenandoah
Eckart, Paul I., Ottumwa
Eller, Lancelot W., Kanawha
Eller, William C., Waterloo
Elliott, Olin A., Des Moines
Ellis, Howard G., Des Moines
Ellison, George M., Clinton
Ellsworth, H. Charles, Cherokee
*Ellyson, Charles W., Waterloo
Ellyson, Craig D., Waterloo
Elmer, Norman J., Sumner
Ely, Lawrence O., Des Moines

- Emanuel, Dennis G., Ottumwa
 Emerson, Donald D., Ottumwa
 Emerson, Edward L., Muscatine
 Emmons, Marcus B., Clinton
 Emmons, Margaret S., Clinton
 Emmons, Richard O., Clinton
 Eneboe, Edward M., Hawarden
 Engelmann, Andrew T., Sioux City
 Enggas, John T., Britt
 Enna, Melchior D., Dumont
 Ennis, Harry H., Manchester (L.M.)
 Entinger, Albert J., Dubuque
 Entz, F. Harold, Waterloo
 Erickson, Ernest D., Sioux City
 Ericsson, Martin G., Cedar Falls
 Erikson, Roland E., Davenport
 Esders, Martin S., DeWitt
 Estes, Maurice, Cedar Rapids
 Evans, John E., Winterset
 Evans, William I., Sac City
 Evers, Alvin E., Pella
- Faber, Luke A., Dubuque
 Faber, Luke C., Iowa City
 Fail, Charles S., Adel
 Fangman, Charles A., Carroll
 Farago, Denes S., Arnolds Park
 Farlow, Charles T., Farnhamville (L.M.)
 Farnsworth, Harold E., Storm Lake
 Farrage, Edward R., Council Bluffs
 Faust, John H., Manson
 Fee, Charles H., Denison
 Fee, Knight E., Toledo
 Feightner, Robert L., Fort Madison
 Feldick, Harley G., Buffalo Center
 Fellows, Joseph G., Ames
 Felter, Allan G., Van Meter
 Fenlon, Charles E., Mason City
 Fenton, Charles D., Bloomfield
 Fenton, Robert L., Centerville
 Ferguson, John W., Newton
 Ferguson, Paul, Lake City
 Ferlic, Rudolph J., Carroll
 Fesenmeyer, Charles R., Davenport
 Fickel, Jack D., Red Oak
 Field, Charles A., Cresco
 Field, Grace E. W., Juneau, Alaska
 Fieseler, Walter R., Fort Dodge
 Fieselmann, George F., Spencer
 Fillenwarth, Floyd H., Charles City
 Fisch, Roman J., Le Mars
 Fischer, Harry W., Iowa City
 Fisher, June M., Iowa City
 Fisher, William A., Creston
 Fishman, Harlow J., Cherokee
 Fisk, Charlotte, Des Moines
 Fitzgerald, Joseph D., Sloan
 Flannery, Francis E., Cedar Rapids
 Flater, Norman C., Floyd
 Flatt, Adrian E., Iowa City
 *Flickinger, Roger R., Mason City
 Flocks, Rubin H., Iowa City
 Floersch, Eugene B., Council Bluffs
 Floyd, Mark L., Iowa City
 Flynn, Charles H., Clarinda
 Flynn, Gordon A., Davenport
 Flynn, James R., Jr., Cedar Rapids
 Foley, Robert J., Davenport
 Foley, Walter E., Davenport
 Foley, Walter E., Jr., Davenport
 Fomon, Samuel J., Iowa City
 *Ford, James C., Los Angeles, Calif.
 Fordyce, Frank W., Des Moines
 Forsythe, Dorothy C., Newton
 Forsythe, Frank E., Newton
 Foss, John F., Burlington
 Foss, Robert H., Des Moines
 Foster, Morgan J., Cedar Rapids
 Foster, Wayne J., Cedar Rapids
 Foster, Warren H., Clinton
 Foulk, Frank E., Backus, Minnesota (L.M.)
 Fowler, Willis M., Iowa City
 Fox, Charles L., Pharr, Texas (L.M.)
 Fox, Ray A., Charles City
 Fox, Stephan, Ottumwa
 Franchere, Chetwynd M., Mason City
 Franey, William E., Cedar Rapids
 Frank, Louis J., Sioux City
 Frank, Owen L., Maquoketa
 Fransco, Peter P., Ruthven
 Fraser, James B., Des Moines
 Fraser, John H., Monticello
 Frech, Raymond F., Newton
 Free, Richard M., Independence
 Freed, David A., West Union
 French, Royal F., Marshalltown (L.M.)
 French, Valiant D., Cedar Falls
 French, Vera V., Bettendorf
 Frenkel, Hans S., Clarinda
 Friday, Walter C., Burlington
 Frink, Lyle F., Spencer
 Frink, Lynn E., Reinbeck
 Fritchen, Arthur F., Decorah
 From, Paul, Des Moines
- Frost, Loraine H., Iowa City
 Fry, Gerald A., Vinton
 Fuerste, Frederick, Jr., Dubuque
 Fuller, Lyle R., Garner
 Funk, David C., Iowa City
 Furumoto, Kiyoshi, Keosauqua
- Gacusana, Jose M., Akron
 Galinsky, Leon J., Des Moines
 Gallagher, John P., Oelwein
 Gamet, Elmo E., Lamoni
 Gangeness, Leonard G., Des Moines
 Gann, Edward R., Sigourney
 Gannon, James, Laurens
 Gantz, A. Jay, Greenfield
 Ganzhorn, Harold L., Mapleton
 Gardner, Harold O., Waterloo
 Gardner, John R., Lisbon (L.M.)
 Garland, John C., Marshalltown
 Garred, John L., Whiting
 Garred, William P., Onawa
 Garvy, Andrew C., Iowa City
 Gauchat, Robert D., Iowa City
 Gauger, John W., Early
 Gaukel, Leo A., Onawa
 Gault, James B., Creston
 Gearhart, George W., Springville (L.M.)
 Gee, Kenneth J., Shenandoah
 Gelfand, Arthur B., Sioux City
 Gelfand, Ben B., Sioux City
 Gelman, Webster B., Iowa City
 George, Everett M., Des Moines
 George, Louis A., Remsen
 Gerard, Russell S., II, Waterloo
 Gerken, James F., Waterloo
 Gernsey, Merritt N., Long Beach, California (L.M.)
 Gerstman, Herbert, Marion
 Gessford, Howard H., George
 Getty, Everett B., Primghar
 Gibbon, William H., Sioux City
 Gibbs, George M., Burlington
 Gibson, Chelsea D., Sac City
 Gibson, Douglas N., Des Moines
 Gibson, Paul E., Des Moines
 Gibson, Preston E., Davenport
 Giegerich, Walter F., Atlantic
 Gildea, Dorothy J., Davenport
 Giles, Francis E., Fort Dodge
 Giles, W. Clark, Council Bluffs
 Gilfillan, Clarence D. N., Bloomfield
 Gilfillan, Earl E., Bloomfield
 Gilfillan, Edwin O., Bloomfield
 Gilfillan, Homer J., Jr., Bloomfield
 Gillett, Francis A., Oskaloosa (L.M.)
 Gillett, R. Giles, Sigourney
 Gillies, Carl L., Iowa City
 Gillmor, Benjamin F., Red Oak (L.M.)
 Gingles, Earl E., Onawa
 Ginzberg, Fanny T., Cherokee
 Gittins, Thomas R., Sioux City
 Gittler, Ludwig, Fairfield
 Gius, John A., Iowa City
 Givler, Robert L., Iowa City
 Glenn, David H., Eldora
 Glesne, Otto N., Fort Dodge
 Glick, Julius, Clinton
 Glissman, Jean B., Des Moines
 Glomset, Daniel A., Des Moines
 Glomset, Daniel J., Des Moines (L.M.)
 Goad, Robley R., Muscatine
 Goddard, Chester R., Iowa City
 Goddard, William B., Iowa City
 Goebel, Clarence J., Sioux City
 Goebel, Kenneth E., Council Bluffs
 Goen, Edwin J., Charles City
 Goenne, Richard E., Davenport
 Goenne, William C., Sr., Davenport
 Goggin, John G., Ossian
 Goldberg, Louis, Des Moines
 Goldman, Bernard R., Davenport
 Goodenow, Sidney B., Colo (L.M.)
 Goodman, Lawrence O., Marshalltown
 Goplerud, Clifford P., Iowa City
 Gordon, Arnold M., Des Moines
 Gorrell, Ralph L., Clarion
 Gottsch, Edwin J., Shenandoah
 *Gould, George R., Grundy Center (L.M.)
 Gower, Walter E., Fort Dodge
 Graham, James W., Sioux City
 Graham, Thomas C., Iowa Falls
 Grandinetti, Arthur F., Oelwein
 Grant, John G., Ames
 Grau, Amandus H., Denison
 Graves, John P., Dubuque
 Gray, Gordon W., Davenport
 Gray, John F., Melcher (L.M.)
 Gray, Ralph E., Eldora
 *Gray, Lawrence R., Corpus Christi, Texas
 Greco, Louis R., Jr., Boone
 Green, David, Iowa City
 Green, Don C., Des Moines
 Green, John W., Jr., Des Moines
 Greenblatt, Jerald, Cedar Rapids
- Greene, Leonard H., Des Moines
 Greenhill, Solomon, Des Moines
 Greenleaf, John S., Iowa City
 Greenwald, Charles M., Iowa City
 Greteman, Theodore J., Dubuque
 Griesy, Carl V., Rock Valley
 Griffin, Charles C., Dyersville
 Griffith, Robert E., Sheldon
 Griffith, Wylie H., Clinton
 Griffith, William O., Council Bluffs
 Grimmer, George T., Charles City
 Groben, Elmer S., Columbus Junction
 Grossman, Milton D., Sioux City
 Grossman, Raymond S., Marshalltown
 Grossmann, Edward B., Orange City
 Grubb, Merrill W., Galva
 Grundberg, Gerhard, Dows
 Guggenheim, Paul, Council Bluffs
 Gugle, Lloyd J., Ottumwa
 Gurau, Henry H., Des Moines
 Gustafson, John E., Des Moines
 Gutch, Roy C., Chariton
 Gutch, Thomas E., Albia (L.M.)
 Gutenkauf, Charles H., Des Moines
- Hach, Felix T., Ankeny
 Hagen, Edward F., Decorah
 Haines, Dietrich J., Des Moines
 Hake, Dexter H., Knoxville
 Halbert, Helen E., Davenport
 Hale, Albert E., Mason City
 Hall, Forest F., Dunedin, Florida (A.M.)
 Hall, Bonnybel A., Maynard
 Hall, Cluley C., Maynard
 Hall, William E., Iowa City
 Hallam, F. Tully, Des Moines
 Hallberg, Harold C., Oelwein
 Halpin, Lawrence J., Cedar Rapids
 Hamilton, Benjamin C., Jefferson (L.M.)
 Hamilton, Cecil V., Ames
 Hamilton, Henry E., Iowa City
 Hamilton, William K., Iowa City
 Hansell, William W., Des Moines
 Hansen, Fred A., Red Oak
 Hansen, Niels M., Des Moines
 Hansen, Robert R., Marshalltown (L.M.)
 Hansen, Russell R., Storm Lake
 Hanson, Carl A., Waterloo
 Hanson, Edgar A., Iowa City
 Hanson, Henry M., Waverly
 *Hanson, Paul R., Spokane, Washington
 Hanson, Walter N., Mason City
 Hansmann, Irving J., Council Bluffs
 Hardin, John F., Bedford
 Hardin, Robert C., Iowa City
 Harding, Dale A., Eagle Grove
 Hardwig, Oswald C., Waverly
 Hardwig, Robert P., Waverly
 Harken, Conreid R., Osceola (L.M.)
 Harkness, Gordon F., Davenport (L.M.)
 Harman, Dean W., Glenwood
 Harms, George E., Norway
 Harned, Lewis B., Waterloo
 Harper, George E., Fort Madison
 Harper, Harry D., Fort Madison
 Harper, William H., Jr., Keokuk
 Harrington, Arlan F., Cedar Rapids
 Harrington, Louis E., Danbury
 Harrington, Raymond J., Sioux City
 Harris, D. Dale, Marshalltown
 Harris, Herbert H., Sioux City
 Harris, Percy G., Cedar Rapids
 Harris, Ray R., Dubuque (L.M.)
 Hart, Paul V., Des Moines
 Hartley, Byron D., Mount Pleasant
 Hartman, Frank T., Waterloo (L.M.)
 Hartman, Howard J., Waterloo
 Hartung, Walter, Davenport
 Harvey, Glen W., Cedar Rapids
 Harwood, Arthur M., Waverly
 Hassebroek, Roy J., Orange City
 Hastings, Richard A., Ottumwa
 Hatfield, Mary A., Des Moines
 Haufe, W. David, Bloomfield
 Hausheer, Herman J., Independence, Missouri
 Havlik, Al J., Tama
 Hawkins, Charles P., Clarion
 Hayden, Milford D., Marcus
 Hayes, William P., Cedar Rapids
 Hayne, Robert A., Des Moines
 Hayne, Willard W., Des Moines
 Hazlet, Kenneth K., Dubuque
 Head, James M., Evanston, Illinois
 Heady, Conda C. C., Bloomfield (L.M.)
 Hecker, John T., Cedar Rapids
 Heeren, Ralph H., Des Moines
 Heffernan, Chauncey E., Sioux City
 Hegg, Lester R., Rock Valley
 Hegstrom, George J., Ames
 Heilman, Elwood H., Ida Grove
 Heilman, Robert D., Sioux City
 Heimann, Verne R., Sioux City
 Heise, Carl A., Jr., Jewell
 Heise, Harris R., Marshalltown

- Heise, Robert H., Story City
 Heitzman, Paul O., Cedar Rapids
 Helling, Harry B., Fort Madison
 Helseth, Carleton T., Des Moines
 Helt, Vernon G., Moville
 Henderson, Lauren J., Cedar Falls
 Henderson, Walker B., Oelwein
 Hendricks, Atlee B., Davenport
 Hendrickson, Alvin H., Sioux City
 Henkin, John H., Sioux City
 Henn, Samuel C., Cedar Falls
 Hennes, Raphael J., Oxford
 Hennessey, John M., Manilla
 Hennessy, Felix A., Calmar (L.M.)
 Hennessy, J. Donald, Council Bluffs
 Henningsen, Artemus B., Clinton
 Henstorf, Harold R., Shenandoah
 Herlitzka, Alfred J., Mason City
 Herman, John C., Boone
 Herny, Peter M., Prairie City
 Herrick, Walter E., Ottumwa
 Hermann, Christian H., Jr., Amana
 Hersey, Nelson L., Independence
 Hess, John, Jr., Des Moines
 Heuermann, Dorothy J., Coulter
 Heusinkveld, Henry J., Clinton
 Hickenslooper, Carl B., Winterset (A.M.)
 Hickey, Robert C., Iowa City
 Hicks, Wayland K., Sioux City
 Hildebrand, Howard H., Ames
 Hill, Don E., Clinton
 Hill, James W., Mount Ayr (L.M.)
 Hill, Julia Ford, Santa Barbara, Calif. (L.M.)
 Hill, Lee Forrest, Des Moines
 Hill, Richard W., Lake Mills
 Hines, Ralph E., Des Moines
 Hintz, D. Charles, Cincinnati, Ohio
 Hirleman, Hal R., Cedar Rapids
 Hirsch, Harry N., Sioux City
 Hirst, Donald V., Council Bluffs
 Hodges, Robert E., Iowa City
 ★Hoelg, Howard E., Sherman AFB, Oklahoma
 Hoffman, Paul M., Tipton (L.M.)
 Hoffmann, Robert W., Des Moines
 Hoffmann, William P., Davenport
 Hogenson, George B., Eagle Grove
 Hollander, Werner M., Davenport
 Hollis, Edward L., Marengo (L.M.)
 Holman, David O., Ottumwa
 Holtey, Joseph W., Ossian
 Hombach, Walter P., Council Bluffs
 Hommel, Placido R. V., Elkader
 Honke, Edward M., Sioux City
 Hooley, John S., Sigourney
 Hopkins, David H., Des Moines (A.M.)
 Hopp, Ralph L., Council Bluffs
 Hornaday, William R., Des Moines
 Hornberger, John R., Manning
 Horst, Arthur W., Sioux City
 Hosford, Horace F., Burlington
 Hospodarsky, Leonard J., Des Moines
 Hostetter, John I., Des Moines
 Houghton, Earl J., Bettendorf
 Houlihan, Jay E., Mason City
 Houlihan, Francis W., Ackley
 Houser, Cass T., Cedar Rapids (L.M.)
 Housholder, Harold A., Winthrop (L.M.)
 Howar, Bruce F., Webster City
 Howard, Dwayne E., Sioux City
 Howard, Lloyd G., Council Bluffs
 Howe, Gerald W., Iowa City
 Howell, David A., Dubuque
 Howell, Elias B., Ottumwa (L.M.)
 Hoyt, John L., Creston
 Hruska, Glen J., Belmond
 Huber, Robert A., Charter Oak
 Hubiak, John, Odebolt
 Hudek, Joseph W., Garnaville (L.M.)
 Huey, John R., Cedar Rapids
 Huffman, William C., Iowa City
 Hughes, Parker K., Des Moines
 Hughes, Robert O., Ottumwa
 Hughes, Walter W., Davenport
 Huguet, Keith R., Osage
 Hull, Gene I., Des Moines
 Hulse, Roy A., Burlington
 Hulstra, Hans, Clarinda
 Hunt, Van W., Mason City
 Hunting, Ralph D., Cedar Rapids
 Huntley, Charles C., Avoca
 Hurevitz, Hyman M., Davenport
 Huston, Daniel F., Burlington
 Huston, John Jr., Cedar Rapids
 Huston, K. Garth, Des Moines
 Huston, Marshall D., Cedar Falls
 Huston, Paul E., Iowa City
 Hutchinson, Roy M., Fort Dodge
 Hyatt, Charles N., Corydon
 Hyde, John R., Iowa City
 Ihle, Charles W., Cleghorn (L.M.)
 Ingham, Paul G., Mapleton
 Ingle, Newell G., Cedar Rapids
 Ingraham, David R., Sewal
 Ireland, William W., Ottumwa
 Irish, Thomas J., Forest City
 Irving, Noble W., Jr., Des Moines
 Isham, Robert B., Osage
 Jack, Darwin B., Oelwein
 Jackson, James M., Jefferson (L.M.)
 Jackson, James S., Mount Pleasant
 Jacobs, Carl A., Sioux City
 Jacobs, Edward L., Conrad
 Jacobs, Moody D., Cedar Rapids
 Jacoby, James A., Burlington
 Jacques, Lewis H., Iowa City
 Jaenicke, Kurt, Clinton (L.M.)
 Jaffe, Harold, Iowa City
 Jaggard, Robert S., Oelwein
 James, Audra D., Des Moines (A.M.)
 James, David W., Des Moines
 James, Lora D., Fairfield (L.M.)
 James, Peter E., Audubon (L.M.)
 Janse, Phillip V., Algona (L.M.)
 January, Lewis E., Iowa City
 Jaquis, John R., Reinbeck
 Jardine, George A., New Virginia (A.M.)
 Jarvis, Harry D., Chariton (L.M.)
 Jaskunas, Stanley R., Bloomfield
 Jauch, Karl E., La Porte City
 Jeffries, James H., Waterloo
 Jeffries, Milo E., Marshalltown
 Jeffries, Roy R., Waukon
 Jenkins, George A., Albia (L.M.)
 Jenkins, George D., Burlington
 Jenkins, Hanley F., Des Moines
 Jenkinson, Harry R., Iowa City
 Jenks, Alonzo L., Jr., Des Moines
 Jensen, Kenneth V., Clarinda
 Jensen, LeRoy E., Audubon
 Jensen, Ralph, Ames
 Jerdee, Ingebrecht C., Clermont
 Jerome, Peter, Davenport
 Jirsa, Harold O., Cedar Rapids
 Johann, Albert E., Des Moines (A.M.)
 Johnson, Aaron G., Sioux City
 Johnson, Charles O., Des Moines
 Johnson, Christine Adrian, Iowa City
 Johnson, Clarence A., Coon Rapids
 Johnson, Eugene L., Spirit Lake
 Johnson, G. Raymond, Ottumwa
 Johnson, Harvey A., Atlantic
 Johnson, Merton A., Nevada
 Johnson, Norman M., Clarinda
 Johnson, Richard M., Denison
 Johnson, Robert B., Waterloo
 Johnson, Robert J., Iowa Falls
 Johnson, Robert M., Des Moines
 Johnson, Robert W., Iowa City
 Johnston, C. Harlan, Des Moines
 Johnston, George B., Estherville
 Johnston, Harry L., Ames
 Johnston, Helen, Des Moines (A.M.)
 Johnston, Wayne A., Dubuque
 Jones, Cecil C., Des Moines
 Jones, Charles L., Gilmore City (L.M.)
 Jones, Clare C., Spencer
 Jones, G. William, Des Moines
 Jones, Harold W., Sioux City
 Jones, Harry J., Cedar Rapids (L.M.)
 Jones, Maynard L., Newton
 Jongewaard, Albert J., Jefferson
 Jongewaard, Jean, Jefferson
 Jongewaard, Robert E., Scranton
 Joranson, Robert E., Council Bluffs
 Jordan, John W., Maquoketa
 Jowett, John R., Clinton
 Joyce, George T., Mason City
 Joynt, Albert J., Waterloo
 Joynt, Michael F., Marcus
 Joynt, Robert J., Iowa City
 Judiesch, Kenneth J., Iowa City
 Juel, Einer M., Atlantic
 Kaack, Harry F., Jr., Clinton
 Kaelber, William W., Iowa City
 Kahler, Hugo V., Reinbeck (L.M.)
 Kane, Thomas E., Boone
 Kanealy, John F., Cedar Rapids
 Kapke, Franklin W., Mason City
 Kaplan, David D., Sioux City
 Kaplan, Robert M., Davenport
 Kasiske, Walter B., Keokuk
 Kassmeyer, John C., Dubuque
 Kast, Donald H., Des Moines
 Katzmann, Frederick S., Des Moines
 Keane, Kenneth M., Sioux City
 Keech, Roy K., Cedar Rapids (L.M.)
 Keeney, George H., Mallard (L.M.)
 Keettel, William C., Iowa City
 Kehoe, Joseph L., Davenport
 ★Keil, Philip G., Lackland AFB, Texas
 Keiser, Orris S., Muscatine
 Keith, Charles W., Strawberry Point (L.M.)
 Keith, John J., Marion
 Kelberg, Melvin R., Sioux City
 Keller, Erwin F., Davenport
 Keller, John T., Iowa City
 Kelley, Edmund J., Des Moines
 Kelley, John H., Des Moines
 Kelley, Newell R., Des Moines
 Kelly, Anthony H., Sioux City
 Kelly, Clarkson L., Jr., Charles City
 Kelly, Dennis H., Des Moines (A.M.)
 Kelly, Dennis H., Jr., Des Moines
 Kelly, John F., Sioux City
 Kelly, John F., Fort Dodge
 ★Kelly, Thomas W., Riceville
 Kelly, William J., Dubuque
 Kelsey, James E., Des Moines
 Kemp, Robert R., Keokuk
 Kenefick, John N., Algona
 Kennedy, Edwin D., Mason City
 Kennedy, Elizabeth Smith, Oelwein (L.M.)
 Keohen, Gerald F., Dubuque
 Kepros, Peter F., Cresco
 Kern, George A., Des Moines
 Kern, Lester C., Waverly (L.M.)
 Kerr, W. Hawley, Hamburg
 Kershner, Frank O., Clinton
 Kersten, Herbert H., Fort Dodge
 Kersten, John R., Fort Dodge
 Kersten, Paul M., Fort Dodge
 Kestel, John L., Waterloo
 Ketter, Lester E., Oelwein
 Kettelkamp, Enoch G., Monona
 ★Kettelkamp, Richard G., Monona
 Kettelkamp, William E., Cedar Rapids
 Keyser, Earl L., Marshalltown
 Keyser, Ralph E., Marshalltown (L.M.)
 Kieck, Ernest G., Etowah, North Carolina (A.M.)
 Kiesau, Milton F., Postville
 Kiesling, Harry F., Lehigh
 Kilgore, Ben F., Des Moines
 Kimball, John E., West Liberty
 Kimberly, Lester W., Davenport
 King, Dean H., Spencer
 King, Ross C., Clinton
 Kingsbury, Charles L., Keokuk
 Kingsbury, Kenneth R., Ottumwa
 Kirch, Walter A., Des Moines
 Kirkendall, Walter M., Iowa City
 Kirkham, Lindsay J., Mason City
 Kirlin, Maurice W., Iowa City
 Klein, John L., Jr., Muscatine
 Klein, Robert F., Muscatine
 Kleinberg, Henry E., Des Moines
 ★Kline, Samuel, Sioux City (L.M.)
 Klockslem, Harold L., Des Moines
 Klockslem, Roy G., Rockwell City
 Klok, George J., Council Bluffs
 Kluever, Herman C., Fort Dodge
 Knight, Benjamin L., Cedar Rapids
 Knight, Edson C., Marshalltown
 Knight, Russell A., Rockford
 Knipfer, Robert L., Jesup
 Knosp, Alton, Paton
 Knosp, Norman C., Belle Plaine
 Knott, Peirce D., Sioux City
 Knowles, Fred L., Fort Dodge
 Knox, James M., Cedar Rapids (L.M.)
 Knox, Robert M., Des Moines
 Koch, John S., Madison, Wisconsin
 Koelling, Lloyd H., Newton
 Kohrs, Edward F., Davenport
 Koons, Claude H., Des Moines
 Koontz, Lyle W., Vinton
 Kopecky, Edward F., Cedar Rapids
 Kopsa, Walter J., Tipton
 Korfmacher, Edwin S., Grinnell
 Kornder, Louis H., Davenport
 Korner, Horace M., Iowa City
 Korson, Selig M., Independence
 Kos, Clair M., Iowa City
 Koser, Donald C., Cherokee
 Kosieradzki, Henry, Marshalltown
 Krettek, John E., Council Bluffs
 Krigsten, Joe M., Sioux City
 Krigsten, William M., Sioux City
 Kroack, Kalman J., Buffalo Center
 Kruckenberg, William G., Cedar Rapids
 Krueger, Norman L., Casey
 Kruml, Joseph G., Council Bluffs
 Kruse, Otto E., Tipton
 Kruse, Rolf F., Waterloo
 Kruse, Rufus H., Marshalltown
 Kuehn, Willard G., Clarinda
 Kuhl, Augustus B., Jr., Davenport
 Kuhl, Robert H., Creston
 Kuhn, Mark A. R., Waterloo
 Kuker, Leo H., Carroll
 Kurtz, Cecilia M., Cedar Rapids
 Kyer, Donald L., Dubuque
 Kyle, William S., Washington (L.M.)

- Lagen, Mansfield S., Dubuque
Lagoni, Ralph P., Eldridge
Lake, Carlton B., Cedar Rapids
Lamb, Harry H., Davenport
Lambrecht, Paul B., Des Moines
Landry, Gerard R. F., Council Bluffs
Langworthy, Henry G., Dubuque (L.M.)
Lannon, James W., Mason City
LaPorte, Paul A., Wellsburg
Larimer, Robert C., Sioux City
Larimer, Robert N., Sioux City
Larsen, Elmer A., Centerville
Larsen, Frank S., Fort Dodge
Larsen, Harold T., Fort Dodge
Larsen, Lawrence V., Harlan
Larson, Andrew G., Dickens (L.M.)
Larson, Carroll B., Iowa City
Larson, Erling, Jr., Davenport
Larson, Gerald E., Elk Horn
Larson, Lester E., Decorah
Larson, Marvin O., Hawarden
Larson, Walter W., Ames
LaRue, Jack L., Anita
Latchem, Charles W., Des Moines
Latimer, Milton J., Burlington
Laube, Paul J., Dubuque
Laughlin, Lawrence L., Coralville
Laughlin, Ralph M., Cedar Rapids
Lauvstad, Edward E., Osceola
Lavender, John G., George
Lawler, Matthew P., Jr., Des Moines
Lawlor, Jeremiah F., Cherokee
Lawrence, Montague S., Iowa City
Layton, Jack M., Iowa City
Lechelt, Ronald K., Des Moines
Lederman, Joseph, Oskaloosa
Ledogar, Joseph A., Webster City
Lee, Richard H., Dubuque
Lee, Robert W., Fort Dodge
Lee, Wayne R., Burlington
Leehey, Paul J., Independence
Leffert, Frank B., Centerville
Lehman, Emery W., Bluffton, Indiana (L.M.)
Lehr, Sylvan M., Cedar Rapids
Leibel, Lynn L., Council Bluffs
Leinbach, Samuel P., Belmont
Leinfelder, Placidus J., Iowa City
Leiter, Herbert C., Sioux City
Lekwa, Alfred H., Story City
Lemke, Betty A. T., Des Moines
Lemon, Kenneth M., Oskaloosa
Lenzmeier, Albert J., Davenport
Leonard, Thurman K., Madrid
LePoidevin, Jean S., Waterloo
Lesiak, John J., Titonka
Levy, James W., Sioux City
Lewis, Faye C., Webster City
Lewis, William B., Webster City
Lichtenberg, Robert P., Keokuk
Liebendorfer, Richard A., Tulsa, Oklahoma
Lierle, Dean M., Iowa City
Lierman, Clifford E., Lake View
Light, Henry R., Grinnell
Liken, John A., Creston
Limbirt, Edwin M., Council Bluffs
Limburg, John I., Jr., Jefferson
Lindell, Sherman E., LeMars
Linder, Enfred E., Ogden
Lindholm, Claire V., Armstrong
Lindholm, Hugo A., Armstrong
Lindley, Ellsworth L., Cedar Rapids
Linge, Scott, Fayette
Linthacum, Robert W., Dysart
Liska, Edward J., Ute
Lister, Eugene E., Dallas Center
Lister, Kenneth E., Ottumwa
Lloyd, John M., Washington
Locher, Robert C., Cedar Rapids
Lockhart, Harold A., Cedar Rapids
Loeck, John F., Independence
Loes, Anthony M., Dubuque (L.M.)
Lohman, Frederick H., Waterloo
Lohmann, Carl J., Burlington
Lohnes, John H., Iowa City
Lohr, Phillips E., Churdan
Long, Draper L., Mason City
Longworth, Wallace H., Boone
Looker, Richard F., Cedar Rapids
Loomis, Frederic G., Waterloo
Lorfeld, Gerhard W., Davenport
Losasso, David A., Davenport
Losh, Clifford W., Des Moines (L.M.)
Losh, Clifford W., Jr., Des Moines
Lovejoy, E. Parish, Des Moines
Loving, Luther W., Estherville
Lowe, Norman, Burlington
Lowry, Charles F., Council Bluffs
Lowry, Earl C., Des Moines
Loxterkamp, Edward O., Rolfe
Ludwig, Clarence J., Waterloo
Luehrsmann, Bernard C., Dyersville
Luke, Edward, Washington, D. C. (L.M.)
Lulu, Donald J., Des Moines
Luse, Ralph F., Clinton
Lutton, John D., Sioux City
Lynn, Clarence E., Dubuque (A.M.)
Lyons, Mary L., Des Moines
MacGregor, John K., Mason City
MacLeod, Hugh G., Greene
MacQueen, John C., Iowa City
McAllister, William G., Manly
McBride, Robert H., Sioux City
McCall, John H., Allerton (L.M.)
McCarthy, Frank D., Sioux City
McClean, Earl D., Des Moines (L.M.)
McClellan, John W., Onawa
McClure, Gail A., Ames
McClurg, Frank H., Fairfield
McConkie, Edwin B., Cedar Rapids
McConnell, Robert W., Davenport
McCool, Robert F., Clarion
McCormack, William C., Ames
McCoy, Harold J., Des Moines
McCoy, John T., Cedar Falls
McCrary, W. Ashton, Lake City
McCreedy, Murry L., Washington
McCreight, George C., Carmel Valley, California (A.M.)
McCrory, Wallace W., Iowa City
McCuiston, Harry M., Sioux City
McDonald, Don J., Cedar Rapids
McDowall, Gilbert T., Gladbrook (L.M.)
McEleney, Donald A., Cedar Rapids
McFadden, F. Ross, Davenport
McFarland, Guy E., Ames
McFarland, Guy E., Jr., Ames
McFarland, Julian E., Ames (A.M.)
McFarlane, Donald J., Dubuque
McFarlane, John A., Sioux City
McGahey, William B., Webster City
McGarvey, Cornelius J., Des Moines
McGeehon, Robert C., Indianola
McGilvra, Arthur L., Sioux Center
McGinnis, George C., Fort Madison
McGrane, Merle J., New Hampton
McGuire, Kenneth L., Keota
McHugh, Charles P., Sioux City (L.M.)
McIllice, Raymond C., Fort Madison
McIntosh, Philip D., Ottumwa
McIntyre, Caryl C., Waterloo
McKay, Kenneth H., Muscatine
McKay, Richard V., Jr., Dubuque
McKean, Frank F., Allison
McKee, Albert P., Iowa City
McKibben, Joe T., Carroll
McKitterick, John C., Burlington
McLaughlin, Philip A., Coralville
McMahon, Arthur E., Jr., Mason City
McMahon, Thomas, Garner (L.M.)
McMeans, Thomas W., Davenport
McMillan, George J., Fort Madison
McMillan, James T., III, Des Moines
McMurray, Edward A., Newton
McMurray, Harry N., Burlington
McNamara, Robert J., Dubuque
McNamee, Jesse H., Des Moines
McQuiston, J. Stuart, Cedar Rapids
McTaggart, William B., Fort Dodge
McVay, Melvin J., Lake City
Macy, William W., Iowa City
Margaret, Ernest C., Glenwood
Magee, Emery E., Waterloo (L.M.)
Maher, Louis L., Des Moines
Mahoney, James D., Council Bluffs
Mailliard, Robert E., Storm Lake
Maixner, Reynold R., Ottumwa
Maixner, William D., Ottumwa
Maland, Donald O., Cresco
Malek, John C., Iowa City
Maltry, Emile, Jr., Fort Dodge
Manderscheid, Robert A., Boire
Mangan, J. Thomas, Forest City
Manning, Ephraim L., Davenport
★Manoles, Filias N., Des Moines
Manthey, Charles E., Waterloo
Maplethorpe, Charles W., Toledo
Maplethorpe, Charles W., Jr., Toledo
Marble, Edwin J., Marshalltown
Marble, Willard P., Marshalltown
Margules, Maurice P. J., Council Bluffs
Margulies, Harold, Des Moines
Marinos, Harry G., Mason City
Mark, Cornelius, Sanborn
Mark, Edward M., Clarksville
Mark, Milton S., Des Moines
Marker, John L., Davenport
Markham, William S., Harlan
Marme, George W., DeWitt
Marquis, Fred M., Waterloo
Marquis, George S., Des Moines
Marriott, Charles M., Sioux City
Marsh, Frederick E., Council Bluffs
Marsh, Frederick E., Jr., Council Bluffs
Martin, James W., Holstein
Martin, Josef R., Carroll
Martin, Lee R., Council Bluffs
Martin, Ronald F., Sioux City
Martin, Sidney D., Carroll (L.M.)
Martini, Henry F., Council Bluffs
Mason, Edward E., Iowa City
Mast, Truman M., Washington
Mater, Dwight A., Knoxville
Mathiasen, Emmett B., Council Bluffs
Mathiasen, Henning W., Council Bluffs
Mathiasen, John W., Council Bluffs
Matthey, Carl H., Davenport
Matthey, Walter A., Bettendorf
Mattice, Lloyd H., Sheldon
Mattice, Roger J., Sioux Rapids
Mauritz, Emory L., Des Moines (A.M.)
Maxwell, Charles T., Sioux City
Maxwell, John R., Iowa City
May, George A., Forest Grove, Oregon (A.M.)
Mayner, Frank A., Montrose
Mazur, Theodore T., Burlington
Meany, Thomas J., West Bend
Meekin, Patrick C., West Bend
Meffert, Clyde B., Cedar Rapids
Megedren, William H., Mount Pleasant
Mehrl, William J., Manchester
Melampy, C. Nelson, Ottumwa
Melgaard, Robert T., Dubuque
Mellen, Robert G., Clinton
Meng, Ralph H., Clarinda
Merillat, Herbert C., Des Moines
Merkel, Byron M., Des Moines
Merritt, Arthur M., Des Moines (L.M.)
Merritt, F. Benjamin, Dubuque
Merritt, James O., Des Moines
Merselis, Harold K., Audubon
Mershon, Clinton E., Iowa City (L.M.)
Merulla, Charles A., Marion
Meservey, Maynard A., Jr., Des Moines
Meyer, Albert J., Iowa City
Meyer, Alfred K., Clinton
Meyer, Robert J., Wellsburg
Meyers, Frank W., Dubuque (L.M.)
Meyers, Paul T., Bloomfield
Meyers, Robert P., Ottumwa
Michaelson, Beryl F., Dakota City
Michaelson, Don, Sac City
Michaelson, Manly, Bellevue
Michelfelder, Theodore J., Fort Dodge
Michener, Robert B., Iowa City
Middleton, William H., Cedar Rapids
Mikelson, Clarence J., Waterloo
Miller, Chester I., Iowa City
Miller, Donald F., Williamsburg
Miller, Enos D., Wellman
Miller, Garfield, Calmar
Miller, Howard L., Cedar Rapids
Miller, Jay R., Wellman
Miller, Keith E., Agency
Miller, Lawrence A., North English
Miller, Lawrence A., II, North English
Miller, Richard L., Waterloo
Miller, Robert C., Waterloo
Miller, Temple M., Muscatine
Milroy, Thomas W., Des Moines
Miltner, Leo J., Davenport
Minassian, Thaudes A., Des Moines (L.M.)
Mincks, James B., Bloomfield
Miner, James B., Charles City
Mirick, Donald F., Clinton
Mitchell, Claire H., Cincinnati (L.M.)
Mitchell, Duane E., Mount Ayr
Mitchell, Richard C., Waterloo
Moberly, John W., Dubuque
Mochal, John L., Independence
Moe, Ralph H., Griswold
Moeller, Jay A., Dubuque
Moen, Stanley T., Cedar Rapids
Moermond, James O., Buffalo Center
Moershel, Henry G., Homestead
Moershel, William J., Cedar Rapids
Moessner, Harold, Amama
Moles, Marvin R., Newton
Monahan, Joseph L., Clinton
Monnig, Philip J., Sioux City
★Montgomery, Albert E., New York, N. Y.
Montgomery, George E., Ames
Montgomery, Guy E., Washington
Montz, Fred, Lowden
Moon, Barclay J., Cedar Rapids
Mooney, James C., Des Moines
Moore, Carlyle C., Emmetsburg
Moore, Edson E., Fort Dodge
Moore, Jesse C., Eldon (L.M.)
Moore, Pauline V., Iowa City
Moore, Richard M., Des Moines
Moorehead, Harold B., Underwood
Mordaunt, Richard H., Nevada
Morgan, Dale D., Marion
Morgan, Francis W., Ottumwa
Morgan, Harold W., Mason City
Morgan, Jack N., Fairfield

- Morgan, Paul W., Mason City
Morgan, Rex L., Sioux City
Morganthal, Otis P., Templeton (L.M.)
Moriarty, Darwin L., Council Bluffs
Morrison, John R., Glidden
Morrison, John W., Alta (L.M.)
Morrison, Robert E., Waterloo
Morrison, Roland B., Carroll
Morrisey, George E., Davenport
Morrisey, William J., Des Moines
Moschell, Richard F., Mason City
Mosher, Martin L., Jr., Iowa City
Motto, Edwin A., Davenport
Mountain, George E., Des Moines
Moyers, Jack, Iowa City
Mugan, Robert C., Sioux City
Mulford, William A., Daytona Beach, Florida
Mulry, William C., Carroll
Mulrow, Frederick W., Cedar Rapids
Munger, Albert E., Jr., Spencer
Munns, Richard E., Hampton
Murphey, Arlo L., Fredericksburg
Murphy, Cornelius B., Alton
Murphy, George C., Waterloo
Murphy, Robert E., Fort Madison
Murray, Frederick G., Cedar Rapids (L.M.)
Murray, Jonathan H., Burlington
Murtaugh, James E., New Hampton
Myerly, William H., Des Moines
★Myers, Frank L., San Francisco, Calif.
Myers, Kermit W., Sheldon
Myers, Robert W., Monticello
- Nafziger, Ezra G., Battle Creek
Nakashima, Victor K., Dubuque
*Nash, Edwin A., Des Moines (L.M.)
Nash, Warren, Waterloo
Neal, Emma J., Cedar Rapids (L.M.)
Nederhiser, Morgan I., Cascade
Needles, Roscoe M., Atlantic
Neff, Herbert, Guthrie Center
Neglia, Fortunato J., Maxwell
Neligh, Gordon L., Jr., Council Bluffs
Nelken, Leonard, Clinton
Nelson, Arnold L., Des Moines
Nelson, F. Lawrence, Ottumwa
Nelson, Leo C., Jefferson
Nelson, Norman B., Iowa City
Nelson, Paul O., Emmetsburg
*Nelson, Robert J., Clinton
Nemec, Joseph J., Cedar Rapids
Nemmers, Gerald J., Washington
Netolicky, Robert Y., Cedar Rapids
Neufeld, Robert J., Davenport
Neuzil, William J., Cedar Rapids (L.M.)
Newland, Don H., Belle Plaine
Newland, Donald O., Des Moines
*Niblock, George F., Homewood, Ill. (L.M.)
Nicoll, Charles A., Panora
Nicoll, David T., Mitchellville (L.M.)
Nielsen, Arnold T., Ankeny
Nielsen, Glen E., Des Moines
Nielsen, Rudolph F., Cedar Falls
Nielsen, Arthur L., Council Bluffs
Nierling, Paul A., Cresco
Nitzke, Everett A., Des Moines
Niver, Edwin O., Clarinda
Noble, Nelle S., Des Moines (L.M.)
Noble, Rusl P., Alta
*Noe, Carl A., Cedar Rapids
Noe, Charles F., Amara (L.M.)
Nolan, John C., Corning
Noonand, Ruben, Iowa City
Noonan, James J., Marshalltown
Nord, Donald H., Cambridge
Nordin, Charles A., Des Moines
Nordschow, Carleton D., Iowa City
Norris, Lewis D., Newton
North, Frank R., Winfield (L.M.)
Northup, Maurice L., Humboldt
Norton, Robert E. G., Des Moines
Noun, Louis J., Des Moines
Noun, Maurice H., Des Moines
Nyquist, David M., Eldora
- Ober, Frank G., Burlington
O'Brien, Lyl J., Fort Dodge
O'Brien, Stephen A., Mason City
O'Brien, Stephen A., Jr., Dubuque
O'Connor, Edwin C., New Hampton
O'Donnell, Joseph E., Clinton
O'Donoghue, Archibald F., Sioux City
Oelrich, Carl D., Sioux Center
Oggel, Herman D., Maurice (L.M.)
O'Keefe, Paul T., Waterloo
O'Leary, Francis B., Sibley
Olin, Elvin E., Dubuque
Olsen, Martin I., Des Moines (L.M.)
Olsen, Max E., Minden
Olsen, Ranald E., Milton
Olson, Evelyn M., Winterset
- Olson, Stewart O., Des Moines
O'Neal, Harold E., Tipton
Onnen, Dale R., Newton
Orcutt, Paul E., Marion
Orelup, Don N., Albion
Ortmeyer, Donald W., Waterloo
Orton, Lawrence C., Mason City
Osborn, C. Robert, Dexter
Osincup, Paul W., Sioux City
Osten, Burdette H., Northwood
O'Toole, Laurence C., LeMars
Ottillie, Donald J., Oelwein
Otto, Paul C., Fort Dodge
Overton, Roy W., West Des Moines
Owca, Anthony S., Centerville
Owen, William E., St. Ansgar
Ozaydin, Ismail M., Council Bluffs
- Packard, Douglas K., Dubuque
Page, Elizabeth B., Iowa City
Page, Wesley M., Iowa City
Pahlas, Henry M., Dubuque
Paige, Ralph T., LaPorte City
Palmer, Carson W., Guttenberg (A.M.)
Palmer, Howard C., West Liberty
Palumbo, Louis T., Des Moines
Paragas, Modesto R., Creston
Parish, John R., Grinnell
Parke, John, Cedar Rapids
Parker, Loran F., Iowa Falls
Parker, Robert L., Des Moines (L.M.)
Parks, Claude O., Iowa City
Parks, John L., Muscatine
Parson, Victor G., Des Moines
Parsons, John C., Des Moines
Paschal, George A., Webster City
Pascoe, Paul L., Carroll
*Patterson, John N., Burlington (L.M.)
Patterson, Roy A., Webster City
Paul, John D., Anamosa
Paul, Richard E., Des Moines
Paul, William D., Iowa City
Paulsen, Donald A., Victor
Paulsen, Herbert B., Harris
Paulson, Jerome F., Mason City
Paulus, Edward W., Iowa City
Paulus, James W., Dubuque
Pearlman, Leo R., Des Moines
Pearson, George J., Burlington
Peart, John C., Davenport
Peasley, Harold R., Des Moines
Peggie, Harry M. K., Van Meter
Pedersen, Arthur M., Council Bluffs
Pedersen, Paul D., Council Bluffs
Peggs, Harold J., Creston
Peisen, Conan J., Des Moines
Pelz, Werner P., Charles City
Penly, Don H., Cedar Falls
Pennington, Orville J., Dexter (L.M.)
Perel, Ada R., Des Moines
Perkins, Franklin C., Hedrick
Perkins, Rollin M., II, Davenport
Perley, Arthur E., Waterloo
Perrin, William D., Sumner
Pester, George H., Council Bluffs
Peters, Earl E., Muscatine
Petersen, Donald C., Burlington
Petersen, Emil C., Atlantic
Petersen, Millard T., Atlantic
Petersen, Robert E., Dubuque
Petersen, Vernon W., Clinton
Peterson, Byron E., Mount Pleasant
Peterson, Charles R., Des Moines
Peterson, Elroy R., Ames
Peterson, Evan A., Burlington
Peterson, Frank R., Cedar Rapids
Peterson, John C., Hartley
Peterson, Loren G., Des Moines
Peterson, Ray W., Clear Lake
Peterson, Richard E., Iowa City
Peterson, Richard J., Panora
Pfaff, Robert A., Dubuque
Pfeiffer, Donald W., McGregor
Pfeiffer, Harry E., Riviera Beach, Florida (L.M.)
Pfuhl, Anthony C., Dubuque
Phelan, Mary Patricia, Altoona
Phelps, Gardner D., Waterloo
Phelps, Richard E. H., New Sharon
Phetepiece, Willard S., Davenport
Phillips, Albin B., Clear Lake (L.M.)
Phillips, Allan B., Des Moines
Phillips, Clarence P., Muscatine
Phillips, Walter B., Montezuma
Piburn, Marvin F., Des Moines
Piekenbrock, Frank J., Dubuque
Piekenbrock, Thomas C., Dubuque
Piercy, Kenneth C., Ames
Pierson, Lawrence E., Sioux City
Pietrzak, Julius, Cedar Rapids
Ping, Er Chang, Independence
Pitcher, Arlo L., Belmond
Pitluck, Harry Louis, Laurens
Pittinger, Charles B., Iowa City
- Plager, Vernon H., Waterloo
Plankers, Arthur G., Dubuque
Poepsel, Frank L., West Point
Ponselt, Ignacio V., Iowa City
Poore, Samuel D., Villisca
Porter, Lawrence W., Indianola
Porter, Philip M., New Hampton
Porter, Richard C., Des Moines
Porter, Robert J., Des Moines
Porter, S. Dale, Grinnell
Posner, Edward R., Jr., Des Moines
Posner, Edward R., Des Moines (L.M.)
Powell, Adrian R., Elkader
Powell, Charles W., Cherokee
Powell, Lester D., Des Moines
Powell, Robert A., Shenandoah
Powell, Robert M., Mason City
Powell, William R., Des Moines
Powers, George H., Shenandoah
Powers, Henry R., Emmetsburg
Powers, Ivan R., Waterloo
Powers, John L., Estherville
Powers, William J., Vinton
Preacher, Charles B., Davenport
Preece, Wade O., Waterloo
Prescott, Kenneth H., Storm Lake
Presnell, William H., Charlotte
Prewitt, Leland H., Ottumwa
Priestley, Joseph B., Des Moines
Proctor, Rothwell D., Cedar Rapids
Prouty, James V., Cedar Rapids
Province, William, Jr., Dubuque
Ptacek, Joseph L., Webster City
Pugh, Philip F. H., Sioux City
Pumphrey, Loira C., Keokuk
Puntenney, Andrew W., Boone
Purdy, William O., Des Moines
- Radcliffe, Christian E., Iowa City
Radicia, Lucy M., Council Bluffs
Rahn, Gordon E., Mount Vernon
Rainy, Curtis W., Elma
Ralston, Furman P., Knoxville
Rambo, David T., Ottumwa (L.M.)
Ramsdell, Stuart T., Clarinda
*Randall, John H., Iowa City
Randall, Ross G., Waterloo
Randall, William L., Hampton
Randolph, Aaron P., Anamosa
Rankin, Isom A., Iowa City
Rankin, John R., Keokuk
Rankin, William, Keokuk (L.M.)
Ransom, Harry E., Des Moines
Rater, David L., Ottumwa
Rathe, Herbert W., Waverly
Rausch, Gerald R., Sioux City
Ravreby, Mark D., Des Moines
Raw, Elmer J., Pierson (L.M.)
Read, Charles H., Iowa City
Reading, Donald S., Marshalltown
Readinger, Harry M., New London
Redfield, Earl L., Des Moines
Redmond, James J., Cedar Rapids
*Redmond, Thomas M., Monticello (L.M.)
Reed, Robert J., Des Moines
Reeder, James E., Sioux City (A.M.)
Reeder, James E., Jr., Sioux City
Reedholm, Edwin A., Grundy Center
Reibold, Frank W., Carroll
Reimers, Robert S., Fort Madison (L.M.)
Rembolt, Raymond R., Iowa City
Rence, William G., Mason City
Resinger, Harold E., Des Moines
Reuber, Roy N., Mason City
Reuling, Frank H., Waterloo
Rhodes, John M., Pocahontas
Rice, Floyd W., Des Moines (L.M.)
Richard, Clysta A., Iowa City
Richards, Richard D., Iowa City
Richardson, Francis H., Council Bluffs
Richey, Granville L., Centerville
Richmond, Arthur C., Fort Madison
Richmond, Frank R., Fort Madison
Richmond, Frank R., Jr., Fort Madison
Richmond, Paul C., New Hampton
Richter, Harold J., Albion
Rider, Harmon E., Philadelphia, Penn.
Ridenour, Edward J., Waterloo
Ridenour, Joseph E., Waterloo (L.M.)
Riegelman, Ralph H., Des Moines
Rieniets, John H., Cedar Rapids
Riggert, Leonard O., Clinton
Rimel, George W., Bedford
Rindskopf, Wallace, Des Moines
Ringdahl, Irving, Roland
Ritter, Eugene F., Centerville
Ritter, John A., Ottumwa
*Rizzo, Frank M., Sibley
Robb, James B., College Park, Maryland (L.M.)
Robb, William J., Cedar Rapids
Roberts, C. Ronald, Dysart

- Roberts, Francis M., Knoxville (L.M.)
 Roberts, Justus B., Ottumwa
 Robertson, Treadwell A., West Liberty
 Robinson, Ray G., State Center
 Robinson, Robert E., Waverly (L.M.)
 Robinson, Van C., Des Moines
 Rock, J. Gordon, Davenport
 Rock, John E., Davenport
 Rock, William K., Waterloo
 Rockwell, Marydella, Clinton
 Rodabaugh, Kenneth D., Tabor
 Rodawig, Don F., Spirit Lake
 Rodawig, Donald F., Jr., Spirit Lake
 Roddy, Harold J., Mason City
 Rodemeyer, Frederick H., Sheffield (L.M.)
 Rodgers, George H., Mount Ayr
 Rogers, Claude B., Earlville (L.M.)
 Rohlf, Edward L., Jr., Waterloo
 Rohner, William L., Iowa City
 Rohrbacher, William M., Iowa City
 Rohwer, Roland T., Sioux City
 Roley, Everett L., Des Moines
 Rolfs, Floyd O., Parkersburg
 Rolfs, Fred A., Appleton
 Romero, José M., Des Moines
 Rominger, Clark R., Waukon
 Rominger, Clark W., Waukon (L.M.)
 Rooney, Joseph M., Algona
 Rose, Alvin A., Story City (L.M.)
 Rose, Joseph E., Grundy Center
 Rosebrook, Lee E., Ames
 Rosendorff, Charlotte, Davenport
 Ross, Arthur J., Jr., Perry
 Rost, Glenn S., Lake City
 Rotkow, Maurice J., Des Moines
 Roudybush, William B., Muscatine
 Roules, J. Frederic, Mediapolis
 Rowan, Theodore, Des Moines
 *Rowat, Harry L., Des Moines (L.M.)
 Rowley, Robert D., Burlington
 Rowley, William G., Sioux City (L.M.)
 Rowney, George W., Sioux City
 Royal, Lester A., West Liberty (L.M.)
 Royal, Malcolm A., Des Moines (L.M.)
 Rubeboom, Earl G., Winterset
 Rudersdorf, Howard E., Sioux City
 Rusk, Ross P., Dubuque
 Russell, Elwood P., Burlington
 Russell, John, Santa Barbara, Calif. (L.M.)
 Russell, Ralph E., Waterloo
 Rust, Emery A., Webb (L.M.)
 Ruth, Verl A., Des Moines
 Ryan, Allen J., Harlan
 Ryan, Charles M., Sioux City
 Ryan, Martin J., Sioux City
 Ryan, Robert A., Fairfield
- Saar, Jesse L., Donnellson
 Saar, Jesse L., Jr., Burlington
 Saar, John W., Keokuk
 Saffley, Max W., Forest City
 Sahls, Adolph L., Iowa City
 Sampson, Carl E., Creston
 Sampson, Frank E., Creston (L.M.)
 Sanders, George E., Miami, Florida (L.M.)
 Sanders, Matthew G., Fort Dodge
 Sanders, William E., Tucson, Ariz. (L.M.)
 Sands, Sidney L., Des Moines
 Sands, W. Wayne, Des Moines
 Sarff, Floyd G., Logan
 Sartor, Guido J., Mason City
 Satrang, Geraldine, Sioux City
 Sattler, Dwight G., Kalona
 Sauer, Harold E., Marshalltown
 Saul, F. William, Mason City
 Sautter, Robert A., Mount Vernon
 Sawyer, Grace M., Woodward
 Scales, E. Thomas, Des Moines
 Scanlan, George C., Clinton
 Scanlon, George H., Iowa City
 Schacht, Norman A., Fort Dodge
 Schaefer, Paul H., University City, Mo. (L.M.)
 Schaeferle, Lawrence G., Gladbrook
 Schaeferle, Martin J., Eagle Grove
 Schaefer, Leander H., DeWitt
 Schaffner, Rome L., Cedar Rapids
 Scharle, Theodore, Dubuque
 Scheffel, Melvin L., Malvern
 Scheibe, John R., Bloomfield
 Schill, Austin E., Des Moines
 Schissel, Donald, Des Moines
 Schlaser, Verne L., Des Moines
 Schlichtemeier, Ellis O., Spencer
 Schmiedel, Edward E., Charles City
 Schmitt, Donald D., Ringsted
 Schnug, George E., Dows
 Scholl, Charles R., Cedar Rapids
 Schoonover, Richard, Bloomfield
- Schrier, Harold L., Fort Madison
 Schrock, Christian E., Iowa City
 Schroeder, Adrian J., Marshalltown
 Schroeder, Leslie V., Walcott
 Schropp, Rutledge C., Des Moines
 *Schrup, Joseph H., Dubuque (L.M.)
 Schueller, Charles J., Dubuque
 Schultz, Ivan T., Humboldt
 Schultz, Nelle E. T., Humboldt
 Schumacher, Donald R., Clinton
 Schupp, Joseph G., Jr., Des Moines
 Schutter, John M., Algona
 Schwartz, Charles, Cedar Rapids
 Schwartz, John W., Sioux City
 Sciortino, Aileen E. Mathiasen, Council Bluffs
 Sciortino, Arthur L., Council Bluffs
 Sciscent, Verdi I., Waterloo
 Scott, Paul W., Ottumwa
 Scott, Phillip A., Spirit Lake
 Scoville, Victor T., Sioux City
 Sear, John, Alden
 Sebek, Roy O., Fort Dodge
 Sedlacek, Leo B., Cedar Rapids
 Sedlacek, Richard L., Cedar Rapids
 Sedlacek, Robert A., Iowa City
 Seebohm, Paul M., Iowa City
 Seely, Harmon D., Cherokee
 Seibert, Cecil W., Waterloo
 Seidler, William A., Jr., Jamaica
 Sells, Benjamin B., Independence (L.M.)
 Selo, Rudolph A., Council Bluffs
 Senft, Otto E., Monticello
 Senska, Frank R., Iowa City (A.M.)
 Senty, Elmer G., Davenport
 Severson, George J., Slater (L.M.)
 Severson, Wayne L., Slater
 Shafer, Arthur W., Davenport
 Shank, Raymond A., Cedar Rapids
 Sharpe, Donald C., Dubuque
 Shaw, David F., Britt
 Shaw, Robert E., Waverly
 Shea, Thomas E., Storm Lake
 Sheeler, Ivan H., Marshalltown
 Sheets, Raymond F., Iowa City
 Shelton, Charles D., Bloomfield (L.M.)
 Shepherd, Loyd K., Des Moines
 Sherman, Richard C., Los Angeles, Calif. (L.M.)
 Sherman, Robert B., Ackley
 Shiffler, H. Kirby, Des Moines
 Shinkle, William C., Des Moines
 Shohet, Isaac H., Bode
 Shope, Charles D., Greenfield
 Shorey, Joseph R., Davenport
 Shulman, Herbert, Waterloo
 Shultz, William T., Des Moines
 Shurts, John J., Eldora
 Sibley, Edward H., Sioux City
 Sibley, John A., Ames
 Simpson, Roger A., Iowa City
 Simmons, Ralph R., Des Moines (A.M.)
 Singer, John R., Newton
 Singer, Siegmund F., Ottumwa
 Sinn, Irvin J., Williamsburg
 Sinning, Augustus, Wilton Junction (L.M.)
 Sinning, John E., Marshalltown
 Sitz, Edward J., Davenport
 Skallerup, Glenn M., Red Oak
 Skelley, Paul B., Jr., Dubuque
 Skultety, F. Miles, Iowa City
 Skultety, James A., Des Moines
 Sloan, Fred R., Waterloo
 Sloan, Frederic J., Cedar Rapids
 Sloan, Morris G., Des Moines
 Sloan, Roy C., Mount Pleasant
 Sloterdijk, Yme, Knoxville
 Smazal, Stanley F., Davenport
 Smead, Leslie L., Newton (L.M.)
 Smiley, George W., Ottumwa
 Smiley, Ralph E., Mason City
 Smith, Alfred N., Des Moines
 Smith, Andrew C., Waterloo
 Smith, Andrew D., Primghar
 Smith, Anthony P., Jewell
 Smith, Arthur F., Manning
 Smith, Cecil R., Wyoming
 Smith, Clyde J., Gilmore City
 Smith, Elmer M., Eagle Grove
 Smith, Eugene, Waterloo
 Smith, Herman J., Des Moines
 Smith, J. Lawrence, Iowa Falls
 Smith, J. Ned, Iowa City
 Smith, John E., Clarence (L.M.)
 Smith, Ian M., Iowa City
 Smith, Lawrence D., Des Moines
 Smith, Richard C., Cedar Rapids
 Smith, Richard W., Clarion
 Smith, Robert A., Albion
 Smith, Robert J., Stacyville
 Smith, Robert T., Granger
 Smith, Roger B., Mason City
 Smith, S. Rodmond, Red Oak
- Smith, Sidney A., Oskaloosa
 Smrha, James A., Cedar Rapids
 Smythe, Arnold M., Des Moines
 Snyder, Gregg M., Ottumwa
 Snyder, Raleigh R., Des Moines (L.M.)
 Sohm, Herbert A., Des Moines
 Sokol, Charles R., State Center
 Sones, Clement A., Des Moines
 Soper, Robert T., Iowa City
 Sorensen, Elmer M., Red Oak
 Sorensen, Aral C., Davenport
 Sorensen, Kermit R., Sabula
 Southwick, William W., Marshalltown
 Spear, William, Oakdale
 Spearing, Joseph H., Harlan
 Speers, James F., Des Moines
 Speidel, Glenn P., Washington, D. C.
 Spellman, George G., Sioux City
 Spellman, Martin T., Cedar Rapids
 Spencer, John H., Muscatine
 Spencer, William A., Osage
 Sperow, Wendell B., Nevada
 Sperry, Frederick S., Clarinda
 Spevak, Jack J., Des Moines
 Spilman, Harold A., Ottumwa
 Spohnheimer, L. Nelson, Leon
 Springer, Floyd A., Des Moines
 Stalford, John H., Los Angeles, Calif. (L.M.)
 Stamler, Frederic W., Iowa City
 Standefer, Joe M., Des Moines
 Stansbury, John E., Santa Barbara, Calif. (A.M.)
 Stark, Callistus H., Cedar Rapids
 Stark, Frederick M., Sioux City
 Starr, Charles F., Mason City (L.M.)
 Stary, Allen C., Sioux City (A.M.)
 Stauch, Martin O., Moorhead
 Stauch, Omar A., Sioux City
 Steenrod, Emerson J., Iowa Falls
 Steffens, Lincoln F., Dubuque
 Steffey, Fred L., Keokuk
 Stegmaier, Otto C., Davenport
 Stegman, Jacob J., Marshalltown
 Steindler, Arthur, Iowa City (L.M.)
 Stephen, Paul, Cedar Rapids
 Stephen, Raymond J., Cedar Rapids
 Stepp, James K., Manchester
 Sternagel, Fred, West Des Moines
 Sternberg, Walter A., Corona Del Mar, California (L.M.)
 Sternhill, Isaac, Council Bluffs
 Stevens, Clark W., Dubuque
 Steves, Richard J., Des Moines
 Stewart, John H., Ottumwa
 Stewart, John K., Clinton
 Stickler, Robert B., Des Moines
 Stimac, Emil M., Davenport
 Stinard, Charles D., Glenwood
 Stinson, Alice C., Estherville (L.M.)
 Stitt, Paul L., Fort Dodge
 Stoakes, Charles S., Lime Springs (L.M.)
 Stober, Raymond W., Charles City
 Stoikovic, Joseph P., Burlington
 Stommel, Joseph, Anamosa
 Storck, Robert D., Dubuque
 Strand, Clarence M., Dubuque
 Strathman, Lawrence C., Shenandoah
 Straub, Joseph J., Dubuque
 Straumanis, Janis, Solon
 Strawn, John T., Vinton (L.M.)
 Strong, Kirk H., Fairfield
 Stroy, Donald T., Council Bluffs
 Stroy, Herbert E., Osceola
 Stuart, Percy E., Nashua (L.M.)
 Stueland, Alvin J. R., Mason City
 Stumme, Ernest H., Denver
 Suchomel, Thomas F., Cedar Rapids
 Sullivan, Daniel J., Dubuque
 Sullivan, John E., Des Moines
 Sullivan, John V., Carroll
 Sulzbach, John F., Burlington
 Summers, Thomas B., Des Moines
 Sun, Kuei shu, Ames
 Sunderbruch, John H., Davenport
 Sumner, Gerald, Marion
 Sutton, Gerald H., Jr., Boone
 Svendsen, Reinert N., Keokuk
 Swanson, Eric M., Fort Dodge
 Swanson, Gerald W., Lamoni
 Swanson, Leslie W., Mason City
 Swayze, V. Warren, Muscatine
 Sweeney, Lloyd J., Sanborn
 Swift, Frederick J., Jr., Maquoketa
 Swift, Frederick J., Sr., Maquoketa (L.M.)
 Sybenga, Jacob J., Pella
 Syhnorsh, John B., Des Moines (A.M.)
 Sywassink, George A., Muscatine
- Tabor, James R., Iowa City
 Tait, John H., Des Moines
 Tamisiea, Francis X., Missouri Valley

- Taylor, Charles B., Claremont, Calif. (L.M.)
 Taylor, Donald E., Stuart
 Taylor, James H., Clinton
 Taylor, Lawrence A., Ottumwa
 Taylor, Maude, Ottumwa (L.M.)
 Taylor, Robert S., Davenport
 Taylor, Wendell W., Sheffield
 Teigland, Joel D., Des Moines
 Telfer, William L., Waterloo
 Teufel, John C., Davenport (L.M.)
 Thaler, David, Cedar Rapids
 Tharp, Herbert M., Monroe
 Thatcher, Wilbur C., Fort Dodge
 Theilen, Ernest O., Iowa City
 Theisen, Roy L., Dubuque
 Thielen, Edward W., Waterloo
 Thielen, John B., Fonda
 Thoman, William S., Sioux City
 Thomas, Clifford W., Mason City
 Thomas, Clyde E., Keosauqua
 Thomas, Colin G., Monticello
 Thomas, Gary L., Iowa City
 Thomas, James H., Sibley
 Thompson, E. Dean, Jefferson
 Thompson, Howard E., Dubuque (L.M.)
 Thompson, James R., Waterloo (L.M.)
 Thompson, Kenneth L., Oakland
 Thompson, Virginia D., Des Moines
 Thomsen, John G., Des Moines
 Thorburn, Oral L., Ames
 Thornton, F. Eberle, Des Moines
 Thornton, George H. M., Iowa City
 Thornton, John W., Lansing
 Thornton, Thomas F., Waterloo
 Thornton, Thomas F., Jr., Waterloo
 Thorson, John A., Dubuque
 Throckmorton, J. Fred, Des Moines
 Throckmorton, Jeannette D., Des Moines (L.M.)
 Throckmorton, Scott L., Chariton
 Throckmorton, Tom B., Des Moines
 Throckmorton, Tom D., Des Moines
 Tice, Claude B., Mason City (L.M.)
 Tice, George L., Mason City
 Tice, W. Arnold, Waterloo
 Tidrick, Robert T., Iowa City
 Tiedeman, John P., Sioux City
 Tierney, Edmund J., Sioux City
 Tierney, James M., Carroll
 Todd, Donald W., Guthrie Center
 Todd, Robert L., Burlington
 Tolliver, Hillard A., Charles City
 Top, Franklin H., Iowa City
 Toubes, Abraham A., Des Moines
 TouVelle, Alwyn R., Bettendorf
 Towle, Robert A., Davenport
 Tracy, John S., Sioux City
 Trafford, Harold F., Council Bluffs
 Traister, John E., Eddyville (L.M.)
 Trefz, Donald L., Nashua
 Trey, Bernard L., Marshalltown
 Treyner, Jack V., Council Bluffs
 Trier, Paul J., Des Moines
 Tripp, Richard C., Fort Dodge
 Troitzig, Joseph F., Akron
 Troxel, John F., Cedar Rapids
 Troxell, Millard A., Cedar Rapids
 Trueblood, Clare A., Indianola
 Trumpe, William D., Cedar Rapids
 Trunnell, Thomas L., Waterloo
 *Turner, George E., Des Moines
 Turner, Howard V., Des Moines
 Turner, James H., Fairfield
 Turner, Rosalie C., Nashua
 Turner, Roy M., Armstrong
 *Turner, William R., Fort Dodge (L.M.)
 Tyler, Donald E., Fort Dodge
 Tyrrell, John E., Manchester
- Uchiyama, John K., Des Moines
 Underriner, Robert E., Holstein
 Updegraff, Charles L., Boone
 Updegraff, Robert R., Des Moines
 Updegraff, Thomas R., Waterloo
 Urlich, Vernon C., Coralville
 Utne, John R., Mason City
 Utterback, Robert A., Memphis, Tenn.
- Valiquette, Frank G., Sioux City
 Van Bammel, Piet F., Ames
 Van Camp, Thomas H., Breda
 Vander Meulen, Herman C., Pella
 Vander Stoep, Harry L., Le Mars
 Van Epps, Clarence E., Phoenix, Ariz. (L.M.)
 Van Epps, Eugene F., Iowa City
 Vangness, Ingar U., Sioux City
 Van Metre, Paul W., Rockwell City
 Van Natta, Carlton W., West Des Moines
 Van Patten, E. Martin, Fort Dodge
- Van Tiger, William H., Eldora (A.M.)
 Van Werden, Benjamin D., Keokuk
 Van Wetzling, Russell J., Bettendorf
 Van Zante, Peter, Pella
 Van Zee, Gene K., Pella
 Vaubel, Ellis K., Estherville
 Vaughan, William R., New London
 Vaughn, Vincent J., Ottumwa
 Vegars, Stanley H., Mason City
 Veldhouse, Richard H., Cedar Rapids
 Veley, Robert W., Cedar Rapids
 Vernon, Robert G., Dubuque
 Vespa, Raymond, Des Moines
 Victorine, Edward M., Cedar Rapids
 Viner, Thomas R., Leon
 Vineyard, Thomas L., Ottumwa
 Voigt, Ernest J., Burlington
 Voigt, Franz O. W., Oskaloosa
 von Lackum, J. Kenneth, Cedar Rapids
 Vorhes, Carl E., Sheldon
 Vorisek, Elmer A., Des Moines
 *Vorpahl, Rudolph A., Cedar Rapids (L.M.)
 Vosika, Edward J., Washington
 Voss, Otto R., Davenport (L.M.)
- Waggoner, Charles V., Clinton
 Wagner, Donald J., Sioux City
 Wagner, Eugene C., Plainfield
 Wahrer, Frederick L., Marshalltown
 Wainwright, Max T., Sioux City
 Waldorf, Richard D., Waterloo
 Walker, Charles C., Des Moines (L.M.)
 Walker, Glenn L., Burlington
 Walker, Herbert P., Clarion (L.M.)
 Walker, John R., Waterloo
 Walker, Thomas G., Riceville
 Walker, Thomas S., Riceville (L.M.)
 Walker, William M., Iowa City
 Wall, David, Ames
 Wall, John M., Boone
 Wallace, Leo F., Burlington
 *Walsh, Eugene L., Huntington, West Virginia
 Walston, Edwin B., Des Moines (L.M.)
 Walston, James H., Sioux City
 Walter, Dennis J., Des Moines
 Walton, Seth G., Hampton
 Walz, Donald V., Iowa City
 Wanamaker, A. Roy, Hamburg
 Wanamaker, John M., Des Moines
 Ward, Donovan F., Dubuque
 Ward, Loraine W., Oelwein
 Warden, Duane D., Council Bluffs
 Ware, John, Mount Vernon
 Ware, Stephen C., Iowa City
 Ware, Thomas A., Sioux City
 Warner, Emory D., Iowa City
 Warner, Paul L., Wesley
 Waterbury, Charles A., Jr., Waterloo
 Watson, Charles F., Fairfield
 Watson, Elbert J., Diagonal (L.M.)
 Watt, Russell H., Marshalltown
 Watters, George H., Des Moines
 Watts, A. Fred, Creston
 Watts, Campbell F., Cedar Rapids
 Watts, Clyde F., Marengo
 Weaver, David F., Davenport
 Weaver, Kenneth H., Union
 Weaver, Ralph L., Cumberland
 Webb, Daniel R., Oakdale
 Webb, James B., Ottumwa
 Weber, Frank N., Walnut
 Weber, William W., Pomeroy
 Weems, Nev E., Paulina
 Weideman, Don C., Vinton
 Weib, Elmer P., Clinton
 Weikel, Vernon E., Sioux City
 Weinberg, Harry B., Davenport
 Weingart, Julius S., Des Moines
 Weis, Howard A., Davenport
 Weland, Regis E., Cedar Rapids
 Wellman, Thomas G., Clinton
 Wells, Rodney C., Marshalltown
 Wentworth, Laydon S., Marble Rock
 Wentzien, Albert J., Tama
 Werner, Harold T., Fort Madison
 Wessels, William R., Marshalltown
 West, Alroy G., Council Bluffs
 West, Norman D., Avoca
 West, Walter E., Centerville (L.M.)
 Westly, G. Travis, Mason City
 Westly, J. Stephen, Mason City
 Weston, B. Raymond, Mason City
 Weston, Robert A., Des Moines (L.M.)
 Wetrich, Max F., Grand Junction
 Wettach, Robert S., Mount Pleasant
 Weyhrauch, Robert A., Waterloo
 Weyer, Joseph J., Fort Dodge
 Wheeler, Richard A., Des Moines
 Whitaker, Ben T., Boone
 White, Charles E., Independence
- White, George H., Des Moines
 White, Newton B., Mason City
 Whitehouse, William N., Ottumwa
 Whitley, Ralph L., Osage (L.M.)
 Whitmer, Lysle H., Muscatine
 Whimire, James E., Sumner
 Wichern, Homer E., Des Moines
 Wicklund, Maurice M., Waterloo
 Wicks, Ralph L., Boone
 Widmer, James G., Wayland
 Wildmer, Reuben E., Winfield
 Wiedemeier, Joseph L., Sioux City
 Wilcox, Delano, Malcom (L.M.)
 Wilcox, Dwain E., Atlantic
 Wilcox, Edgar B., Oskaloosa (L.M.)
 Wilcox, Keith E., Muscatine
 Wilcox, Kenneth M., Fort Dodge
 Wilcox, Robert A., Iowa City
 Wildberger, William C., Perry
 Wilhelm, Raymond W., Sioux City
 Wiley, Alden F., Waukon
 Wilke, Frank A., Perry
 Wilkinson, Levi J., Marshalltown (L.M.)
 Willett, Wilton J., Manchester
 Williams, Lawrence B., Maquoketa
 Williams, M. Neil, Des Moines
 *Williamson, Billy J., Millington, Tennessee
- Wilson, Charles R., Manson
 Wilson, F. Dale, Davenport
 Wilson, Fredric L., Sioux City
 Wilson, Fredric W., Sioux City
 Wilson, Richard J., Iowa City
 Wilson, Robert G., Missouri Valley
 Wilson, William R., Iowa City
 Winder, Clifford D., Waterloo
 Winniger, Louis T., Waterloo
 Winter, F. Donald, Burlington
 Wirtz, Dwight C., Des Moines
 Wise, Arthur C., Iowa City
 Wise, James H., Cherokee
 Wiswell, Orville O., Des Moines
 Wohlwend, Edward B., Iowa City
 Wolcott, Ruth F., Spirit Lake
 Wolf, Henry H., Elgin
 Wolf, William J., West Union
 Wolfe, Otis D., Marshalltown
 Wolfe, Russell M., Marshalltown
 Wolfe, Wilson C., Ottumwa
 Wolff, Harold D., Iowa City
 Wolpert, Paul L., Onawa
 Wolters, Donald E., Estherville
 Wolverton, Benjamin F., Cedar Rapids
 Wood, John R., Wadena (A.M.)
 Woodard, Ralph E., Iowa City
 Woodburn, Chester C., Jr., Des Moines
 *Woodhouse, George R., Vinton (L.M.)
 Woodhouse, Keith W., Cedar Rapids
 Woodward, Arthur W., Waterloo
 Wooters, Richard C., Des Moines
 Wormhoudt, Herbert L., Ottumwa
 Worrell, James T., Keosauqua
 Wray, Clarence M., Iowa Falls (L.M.)
 Wray, Robert M., Cedar Rapids
 Wright, David W., Decorah
 Wright, Thomas D., Newton
 Wright, Thomas G., Marion
 Wubben, Arthur C., Rock Rapids
 Wunschel, Richard C., Davenport
 Wurtzer, Ezra L., Clear Lake (A.M.)
 Wyatt, George M., Iowa City
 Wykoff, Sarah U., Des Moines
- Yancey, C. Corbin, Sioux City
 Yein, Chung Sung, Waterloo
 Yetter, William L., Iowa City
 Yocom, Albert L., Chariton (L.M.)
 York, Dallas L., Creston
 Young, Donald C., Des Moines
 Young, Ernest R., Dubuque (L.M.)
 Young, George G., Des Moines
 Young, Howard O., Marion
 Young, James J., Clinton
 Young, Richard A., Clarion
 Yugend, Sidney F., Indianola
- Zabloudil, Warren C., Preston
 Zager, Lewis L., Waterloo
 Zehr, Earl E., Guttenberg
 Zelinskas, Leonard P., Dubuque
 Ziblich, George J., Lone Tree
 Ziebell, William C., Iowa City
 Ziffren, Sidney E., Iowa City
 Zimmerman, Edmund G., Des Moines
 Zimmerman, George R., Iowa City
 Zockler, Samuel J., Des Moines
 Zukerman, Cecil M., Davenport

★ Military Service
 * Deceased
 (L.M.) Life Member
 (A.M.) Associate Member

FIFTY YEAR CLUB MEMBERS

June 15, 1959

Acher, Albert E. Fort Dodge
 Baldwin, Leon A. Riverton
 Barbour, Howard W. Mason City
 Barr, Guy E. Sioux City
 Bartlett, George E. New Sharon
 Bell, Edward P. Pleasantville
 Bernard, Ransom D. Ames
 Bierring, Walter L. Des Moines
 Bigelow, Charles T. St. Petersburg, Fla.
 Birney, Cleanthus E. Estherville
 Boice, Clyde A. Washington
 Boiler, William F. Iowa City
 Bowers, Arthur S. Orient
 Bowie, Louis L. Zearing
 Bruce, James H. Fort Dodge
 Bullock, William E. Lake Park
 Burbank, Dean S. Pleasantville
 Burcham, Thomas A. Des Moines
 Cantwell, John D. Davenport
 Carlile, Amos W. Manning
 Carson, Andros Des Moines
 Chase, William B., Sr. Des Moines
 Chittum, John H. Wapello
 Clasen, Henry W. Littleton, Colo.
 Cole, Elmer J. Woodbine
 Connely, Roy M. Sergeant Bluff
 Cooper, Gladys A. Lansing, Mich.
 Cooper, Jay C. Villisca
 Crain, Mattie M. Deep River
 Cressler, Frank E. Churdan
 Cretzmeyer, Francis X. Emmetsburg
 Crew, Arthur E. Marion
 Crow, George B. Burlington
 Day, Philip M. Oskaloosa
 Dean, William F. Osceola
 Decker, Jay C. Sioux City
 Dingman, Marshall E. Urbana
 Dolmage, George F. Buffalo Center
 Downing, Leroy M. Cedar Rapids
 Dulin, Tarana J. Iowa City
 Ennis, Harry H. Manchester
 Foulk, Frank E. Backus, Minn.
 French, Royal F. Marshalltown
 Gardner, John R. Lisbon
 Gearhart, George W. Springville
 Gillmor, Benjamin F. Red Oak
 Goodenow, Sidney B. Colo
 Gray, John F. Melcher
 Gutch, Thomas E. Albia
 Hamilton, Benjamin F. Jefferson
 Hansen, Robert R. Marshalltown
 Harken, Conreid R. Osceola
 Harkness, Gordon F. Davenport
 Harrington, Burton Cedar Rapids
 Harris, Ray R. Dubuque
 Heady, Conda C. C. Bloomfield

Hennessy, Felix A. Calmar
 Hill, James W. Mount Ayr
 Hoffman, Paul M. Tipton
 Hollis, Edward L. Marengo
 Houser, Cass T. Cedar Rapids
 Housholder, Harold A. Winthrop
 Howell, Elias B. Ottumwa
 Hudek, Joseph W. Garnavillo
 Ihle, Charles W. Cleghorn
 Jackson, James M. Jefferson
 Jaenicke, Kurt Clinton
 James, Lora D. Fairfield
 James, Peter E. Audubon
 Janse, Phillip V. Algona
 Jarvis, Harry D. Chariton
 Jastram, Alfred H. Remsen
 Jenkins, George A. Albia
 Johnson, Amos F. Manilla
 Jones, Charles L. Gilmore City
 Jones, Harry J. Cedar Rapids
 Kahler, Hugo V. Reinbeck
 Keech, Roy F. Cedar Rapids
 Keeney, George H. Mallard
 Kennedy, Elizabeth S. Oelwein
 Kern, Lester C. Waverly
 Keyser, Ralph E. Marshalltown
 Knox, James M. Cedar Rapids
 Kyle, William S. Washington
 Loes, Anthony M. Dubuque
 Losh, Clifford W. Des Moines
 Luke, Edward Washington, D.C.
 McCall, John H. Allerton
 McClean, Earl D. Des Moines
 McDowall, Gilbert T. Gladbrook
 McHugh, Charles P. Sioux City
 Magee, Emery E. Waterloo
 Merritt, Arthur M. Des Moines
 Meyers, Frank W. Dubuque
 Mitchell, Claire H. Cincinnati
 Morrison, John W. Alta
 Murray, Frederick G. Cedar Rapids
 Neal, Emma J. Cedar Rapids
 Neuzil, William J. Cedar Rapids
 Nicoll, David T. Mitchellville
 Oggel, Herman D. Maurice
 Olsen, Martin I. Des Moines
 Parker, Robert L. Des Moines
 Pfeiffer, Harry E. Riviera Beach, Fla.
 Phillips, Albin B., Sr., Clear Lake
 Posner, Edward R. Des Moines
 Quire, Frank E. Lynnville
 Rambo, David T. Ottumwa
 Rankin, William Keokuk
 Raw, Elmer J. Pierson
 Reimers, Robert S. Fort Madison

Robb, James B. College Park, Md.
 Robinson, Robert E. Waverly
 Rodemeyer, Frederick H. Sheffield
 Rogers, Claude B. Earlville
 Rominger, Clark W. Waukon
 Rose, Alvin A. Story City
 Rowley, William G. Sioux City
 Royal, Lester A. West Liberty
 Royal, Malcolm A. Des Moines
 Rust, Emery A. Webb
 Sanders, William E. Tucson, Ariz.
 Sells, Benjamin B. Independence
 Severson, George J. Slater
 Shelton, Charles D. Bloomfield
 Sinning, Augustus Iowa City
 Smead, Leslie L. Newton
 Smith, John E. Clarence
 Snyder, Raleigh R. Des Moines
 Steindler, Arthur Iowa City
 Sternberg, Walter A. Corona Del Mar, Calif.
 Stinson, Alice C. Estherville
 Stoakes, Charles S. Lime Springs
 Stuart, Percy E. Nashua

Taylor, Maude Ottumwa
 Teufel, John C. Davenport
 Throckmorton, Jeannette Dean Des Moines
 Tinsman, Eugene S. Orient
 Traister, John E. Eddyville
 Turner, William R. Fort Dodge
 Van Epps, Clarence E. Phoenix, Ariz.
 Voss, Otto R. Davenport
 Walker, Charles C. Des Moines
 Walker, Thomas S. Riceville
 Walsh, Thomas N. Hawkeye
 Walston, Edwin B. Des Moines
 Watson, Elbert J. Diagonal
 Westenberger, Joseph C. St. Ansgar
 Weston, Robert A. Des Moines
 Whitley, Ralph L. Osage
 Wilcox, Edgar B. Oskaloosa
 Wilkinson, Levi J. Marshalltown
 Wray, Clarence M. Iowa Falls
 Yocom, Albert L. Chariton
 Young, Ernest R. Dubuque

Membership Roster of the Woman's Auxiliary To the Iowa State Medical Society

Membership in Good Standing as of June 15, 1959

Abbott, Mrs. W. D., Des Moines
Acher, Mrs. A. E., Fort Dodge
Acker, Mrs. R. D., Waterloo
Acker, Mrs. W. H., Waterloo
Adams, Mrs. L. E., Fort Madison
Addison, Mrs. C. P., Waterloo
Aid, Mrs. F. H., Burlington
Alberti, Mrs. R. L., Oskaloosa
Alberts, Mrs. M. E., Des Moines
Alden, Mrs. Oscar, Red Oak
Allen, Mrs. R. B., Burlington
Allender, Mrs. Robert, Des Moines
Allison, Mrs. M. P., Northwood
Alt, Mrs. L. P., Dubuque
Amick, Mrs. Perry, Des Moines
Amesbury, Mrs. H. A., Clinton
Anderson, Mrs. D. C., Stanhope
Anderson, Mrs. H. M., Strawberry Point
Anderson, Mrs. H. N., Des Moines
Anderson, Mrs. J. D., Des Moines
Anderson, Mrs. R. W., Des Moines
Anderson, Mrs. W. D., Des Moines
Anneberg, Mrs. P. D., Carroll
Anthony, Mrs. W. E., Ottumwa
Armstrong, Mrs. M. A., Newell
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Ash, Mrs. W. H., DeWitt
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Boden, Mrs. W. C., Sioux City
Boe, Mrs. Henry, Sioux City
Boice, Mrs. C. A., Washington
Boller, Mrs. G. C., Waterloo
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Bone, Mrs. H. C., Des Moines

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Bovenmyer, Mrs. D. O., Ottumwa
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Brinker, Mrs. M. H., Jefferson
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Brown, Mrs. C. A., Sioux City
Brown, Mrs. E. F., Webster City
Brown, Mrs. I. E., Hartley
Brown, Mrs. P. F., Maquoketa
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Brush, Mrs. C. H., Shenandoah
Buckles, Mrs. R. D., Waterloo
Bullock, Mrs. A. L., Cushing
Bullock, Mrs. G. D., Inwood
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Burke, Mrs. R. W., Jefferson
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Cornish, Mrs. L. R., Indianola

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Downing, Mrs. J. A., Des Moines
Downing, Mrs. W. L., LeMars
Downs, Mrs. V. S., Ottumwa
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Driver, Mrs. R. W., Waterloo
Drown, Mrs. R. E., Fort Dodge
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Gee, Mrs. K. J., Shenandoah
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Gerken, Mrs. J. F., Waterloo
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Gibson, Mrs. P. E., Des Moines
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Gilfillan, Mrs. George, Bloomfield
Gilfillan, Mrs. H. J., Jr., Bloomfield
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Hansen, Mrs. R. R., Storm Lake
Hanson, Mrs. C. A., Waterloo
Hansmann, Mrs. I. J., Council Bluffs
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Harper, Mrs. H. D., Fort Madison
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Hayne, Mrs. R. A., Des Moines
Hayne, Mrs. W. W., Des Moines
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Hegg, Mrs. L. R., Rock Valley
Heileman, Mrs. R. D., Sioux City
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Henderson, Mrs. W. B., Oelwein
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Henn, Mrs. S. C., Cedar Falls
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Hutchinson, Mrs. R. M., Fort Dodge

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Johnson, Mrs. G. R., Ottumwa
Johnson, Mrs. R. B., Waterloo
Johnson, Mrs. R. M., Denison
Johnson, Mrs. R. M., Des Moines
Johnston, Mrs. C. H., Des Moines
Johnston, Mrs. G. B., Estherville
Johnston, Mrs. W. A., Dubuque
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Jones, Mrs. C. C., Spencer
Jones, Mrs. C. L., Gilmore City
Jones, Mrs. H. W., Sioux City
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Jongewaard, Mrs. R. E., Scranton
Jowett, Mrs. J. R., Clinton
Juel, Mrs. E. M., Atlantic

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Kasten, Mrs. W. C., Fort Madison
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Keane, Mrs. K. M., Sioux City
Keeney, Mrs. G. H., Mallard
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Kelley, Mrs. E. J., Des Moines
Kelley, Mrs. J. H., Des Moines
Kelly, Mrs. A. H., Sioux City

Kelly, Mrs. C. L., Charles City
Kelly, Mrs. D. H., Des Moines
Kelly, Mrs. D. H., Jr., Des Moines
Kelly, Mrs. J. F., Sioux City
Kelly, Mrs. W. J., Dubuque
Keohen, Mrs. G. F., Dubuque
Kern, Mrs. G. A., Des Moines
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Kersten, Mrs. J. R., Fort Dodge
Kersten, Mrs. P. M., Fort Dodge
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King, Mrs. D. H., Spencer
King, Mrs. R. C., Clinton
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Knox, Mrs. R. M., Des Moines
Koelling, Mrs. L. H., Newton
Koons, Mrs. C. H., Des Moines
Kosieradzki, Mrs. Henry, Marshalltown
Krause, Mrs. C. S., Cedar Rapids
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Kruise, Mrs. R. H., Marshalltown
Kuehn, Mrs. W. O., Clarinda
Kuhn, Mrs. M. A., Waterloo

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Larsen, Mrs. H. T., Fort Dodge
Larsen, Mrs. L. V., Harlan
Larson, Mrs. G. E., Elk Horn
Larson, Mrs. L. E., Decorah
Larson, Mrs. M. O., Hawarden
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Laube, Mrs. P. J., Dubuque
Lauvstad, Mrs. E. E., Osceola
Lavender, Mrs. J. G., George
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Limburg, Mrs. J. I., Sr., Jefferson
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Lindholm, Mrs. Hugo, Estherville
Lister, Mrs. E. E., Dallas Center
Lister, Mrs. K. E., Ottumwa
Lohmann, Mrs. C. J., Burlington
Lohr, Mrs. Frederick, Sioux City
Lohr, Mrs. P. E., Churdan
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Lovejoy, Mrs. E. P., Des Moines
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Ludwig, Mrs. C. J., Waterloo
Luehrsmann, Mrs. B. C., Dyersville
Lulu, Mrs. D. J., Des Moines
Lutton, Mrs. J. D., Sioux City

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McBride, Mrs. R. H., Sioux City
McCarthy, Mrs. F. D., Sioux City
McClean, Mrs. E. D., Des Moines
McClurg, Mrs. F. H., Fairfield
McCool, Mrs. R. F., Clarion
McCoy, Mrs. H. J., Des Moines
McCoy, Mrs. J. T., Cedar Falls
McFarlane, Mrs. D. J., Dubuque
McFarlane, Mrs. J. A., Sioux City
McGahey, Mrs. W. B., Webster City
McGarvey, Mrs. N. J., Des Moines

McGeehon, Mrs. R. C., Indianola
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 McGinnis, Mrs. G. C., Fort Madison
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 McMillen, Mrs. A. S., Fort Dodge
 McMurray, Mrs. H. N., Burlington
 McNamara, Mrs. R. J., Dubuque
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 McTaggart, Mrs. W. B., Fort Dodge
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 Martin, Mrs. L. R., Council Bluffs
 *Martini, Mrs. H. F., Council Bluffs
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 Mathiasen, Mrs. H. W., Council Bluffs
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 Mazur, Mrs. T. T., Burlington
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Thomas, Mrs. J. H., Sibley	Waterbury, Mrs. C. A., Jr., Waterloo	
Thompson, Mrs. E. D., Jefferson	Watson, Mrs. C. F., Fairfield	

* Deceased

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*Mrs. Channing Smith, Granger.....	1931
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Mrs. D. H. King, Spencer.....	1956
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* Deceased

Exile for the Elderly?

GUNNAR GUNDERSEN, M.D.

LA CROSSE, WISCONSIN

Immediate Past President
American Medical Association

LAST WEDNESDAY I returned from a month-long trip to Australia and Southeast Asia. It is now Wednesday again, and I have visited annual meetings of three state medical societies since Sunday. Believe me, I am beginning to understand how an American diplomat must feel.

Although I heard and saw quite a bit on my trip, I think the last four days have been as enlightening and enjoyable. Personal contact with all the many different individuals who make up our profession is an experience I wish everyone could share with me. The diversity of opinions, personalities and characters could fill an encyclopedia.

DOCTORS EVERYWHERE ARE INTERESTED IN MEDICAL CARE FOR THE AGED

As you might suspect, the one topic with the most interest to the doctors I met and talked with concerned medicine's program of health care for the aged. Time and again I was asked to explain the program. There is an intense interest among doctors about the health problems of the aged.

What are we doing about it? *Why* are we worrying about it? Several times I have been asked this last question. Why is everyone making such a fuss over the aged?

I think that one reason for our concern is that we have an obligation to help solve a problem modern medicine was instrumental in creating. By this I mean that better health care in infancy, youth and middle age has helped more people live longer than ever before in history.

To further illustrate what I am saying, let's take a quick look at some figures. Ten years ago, life expectancy among Americans was 65 years. Today it has been pushed into the lower 70's, and continues to climb. Right now 15 million Americans are over 65, or one out of every 11 persons. By 1970, that proportion will have become one out of every 10.

Because there are so many old people in our society today, we can never hope to solve all their problems at once, especially concerning health care. Medical care alone is insufficient to ensure healthy and comfortable lives for our senior citizens. No, we must take into consideration many other factors, including the social, economic and educational.

For example, the aged have an exceptionally difficult obstacle in adjusting to a society which adores youth. Also, many of those in their later years must adjust to living on drastically reduced incomes, after they have been ousted from their

jobs because they arrived at an arbitrarily determined retirement age. This is particularly hard on those who have not only the ability and the desire, but the very pressing need to continue working.

Another reason why American physicians must concern themselves with establishing a working program to provide health care for the aged is that if we do not, someone else will. And that "someone else" is none other than the federal government, which is ready to step in and take charge of the problem if we fail.

THE GOVERNMENT WILL DO THE JOB IF WE DON'T

We are not alone in our desire to help the aged. During the last 10 years, there has been an increase of Congressional interest in medical matters. In this Congress, an old foe reappeared to harass American medicine in its attempt to do something positive for the aged. I refer to the Forand Bill, a measure which would provide certain hospital, surgical and nursing home benefits to most Social Security beneficiaries. Although the measure died in the last Congress, it has been reintroduced in this session.

Therefore, we have two reasons to justify our concern over the health problems of the elderly: (1) medicine is responsible for man's lengthened lifespan, and (2) if we do not come up with a practical and realistic solution, the federal government will step in.

AMERICAN MEDICINE HAS PREPARED A PLAN

Because the problems of aging have long been expected, American medicine has not been dawdling. A program has been developed over the years to provide our senior citizens with the means of financing health care for their twilight years.

The cornerstone of the AMA plan is the concept of voluntary action on the part of the individual. There is no compulsion, no tax drain, no financial burden on others. Our plan helps the aged to help themselves.

To set this plan into motion, several significant steps have been taken.

1. The AMA House of Delegates last December adopted a proposal which applies specifically to the population group over 65 with very modest resources or low family income. For medical services rendered to this particular group, physicians are urged to accept a level of compensation that will permit the development of insurance and prepayment plans at reduced premium rates. Since

this policy was stated, numerous expressions of support and encouragement have come from the health insurance industry, from members of Congress, from newspapers and from many other sources.

2. State and local medical societies now are implementing this program on their own levels. So far, several societies have endorsed the action, and the matter is being given top priority on the agendas of other state groups at their annual meetings.

3. The AMA House of Delegates has expressed opposition to arbitrary retirement based on chronological age. While retirement is a long-awaited blessing for many of our aging citizens, we feel it should be *voluntary*, based on the desires of the individual.

Our Committee on Aging has called on industry and labor leaders to re-evaluate *compulsory* retirement policies. The AMA feels such isolation and forced inactivity are a gross injustice to our senior citizens, and cannot be tolerated in a society which places a premium on individual ability and worth, and on human dignity.

Also, job discrimination against those approaching retirement age, as well as against those still in their 40's and 50's, is a scar on the face of our society. As doctors, we know that oftentimes a man of 40 or older is in as good physical condition as a man of 30. And the older man has the advantage of increased maturity and experience.

4. We are working closely with both health and commercial insurance organizations to encourage the development of new insurance programs which offer more realistic coverage to persons 65 and over. Commercial firms already have introduced guaranteed-renewable contracts, "paid-up-at-65" and "65-plus" policies.

At the AMA's suggestion, the Health Insurance Institute of America has asked its member companies to provide policies renewable for life . . . coverage for persons *now* over 65 . . . coverages that will continue after retirement . . . and the right of policyholders to convert from a group contract to an individual contract when employment ceases.

Developments in the insurance field are moving at a brisk pace. The Health Insurance Institute of America estimates that 60 per cent of our senior citizens will have protection by the end of next year. That figure will rise to 75 per cent in 1965 and 90 per cent by 1970. Actual growth, however, may exceed these conservative estimates if the medical profession acts with speed and imagination.

5. The AMA has pointed out the urgent need for facilities designed specifically to meet the health needs of the aged. The major medical problems of older people involve chronic illness and degenerative diseases. In a large percentage of these cases, the most important need is not for a lengthy hospital stay or surgery, but rather for medical care in the home or in the doctor's office.

Health care requirements in others range from complete independence to nursing home care.

6. There has been an intensification of research into all aspects of preventive medicine and health maintenance. There also has been increased interest in the mental health problems of the elderly.

MEDICINE'S PLAN IS MUCH THE BEST APPROACH

These steps are part of our well-planned and carefully thought-out program. Although we have been aware of the pressing urgency of the problem, our first concern has been to develop a plan that is more than just words—one which will provide badly-needed help.

Therefore we have no sympathy with the advocates of expedient or hasty approaches to the aging problem, such as the short-sighted philosophy of "pass-a-law-and-raise-the-Social-Security-tax-again."

Time, however, will not stand still for our planning. While we are busy developing and molding the best possible program for our aging citizens, there are forces at work that would turn this need to political advantage. Prime example of the expedient, vote-conscious approach is the Forand Bill.

For a number of reasons, Washington observers doubt that Forand-type legislation will make much headway this year in Congress. But we can be sure it will be pushed for all it is worth during the presidential election year of 1960.

I would like to pass on to you two comments published recently in newspapers about the subject of aging. The first is an editorial that appeared in the ARIZONA REPUBLIC. It calls the Forand Bill "one of the most dangerous pieces of legislation submitted to Congress in recent years."

"It would push the door wide open to socialized medicine," it continues. "It would boost the already skyrocketing Social Security taxes far beyond any level so far contemplated, but even these additional taxes would not pay the cost of the proposed services."

The LOUISVILLE COURIER JOURNAL, in noting the differences between the Forand Bill and the AMA program for the aged, had this to say: "The AMA stands a much better chance of holding the line against drastic change . . . by proposing some improvements of its own than by relying on public dread of socialized medicine to overcome public demand for added medical services."

Instead of merely opposing undesirable legislation, I believe our immediate task is the mobilization of the entire medical profession to help develop widespread, low-cost health insurance coverage for old people.

Regardless of how fine a plan we develop, regardless of how much we talk about it, its success still depends ultimately on what you and I *do* about it. If it is to succeed, if medicine is to help the aged effectively, each one of us must do more than pay it lip service. We are the only ones who can make it work, and I know it *will* work.



Scientific Articles

An Eye Conservation Program For Large and Small Industry

JOHN H. GANSCHOW, M.D.

DETROIT, MICHIGAN

NEARLY FIVE YEARS AGO, a comprehensive, compulsory eye-protection program was initiated in our plants, the Detroit-Chevrolet factories. This program has been highly successful, and I wish to offer this simple plan for your consideration and, I hope, your acceptance. When properly enforced, it should eliminate almost all eye injuries and probably reduce by a sizeable percentage your overall accident experience. It is not a new or unique program. I refer only to the prevention of accidental eye injuries through a 100 per cent safety glass program. This is in addition to and does not replace special devices such as helmets, shields and cup goggles when they are indicated.

In general, our plants are engaged in the forging, machining, fabricating and assembling of the axle assemblies, gears, springs and bumpers of Chevrolet cars and trucks. These products are so divergent in their manufacturing processes that there is a wide range of tools, operating conditions and skills involved in their manufacture.

Surely, each of you has had some discouraging experiences with the frequent repetition of accidental injuries that you seemed helpless to prevent. The physician cannot always appeal effectively to the intellects or emotions of the employees he serves, nor is it frequently possible or practical for management to change the types of work or the methods of performance to eliminate hazards that the doctor has noted.

It is my impression that many of the people employed in our plants are interested in safety in an abstract way as it applies to the entire group, but not as it applies to themselves, individually.

They appear to resent the mild inconveniences occasioned by safe practice, and seem to prefer to assert their independence by taking unnecessary risks and short cuts. Employees' eyes must be protected, however, in spite of their lack of interest in their continued well-seeing.

EYE INJURIES ARE VERY SERIOUS ONES

Most of the occupational injuries that we see are of little permanent consequence. Contusions, cuts, fractures, burns or other traumatizing injuries to the extremities and body ordinarily heal satisfactorily and without residual functional disabilities. The musculo-skeletal system will tolerate extensive surgical disturbances when such become necessary. Even permanent impairments such as amputations, scars and weakness may affect the workman's ability to do his job but very little.

Injuries to the eyes, however, are quite another matter. Even minor injuries to them cause extensive functional disabilities. There are strong probabilities of permanent impairment of vision from tiny scars that would pass unnoticed in other areas. Increasing visual loss over periods of years through progressive changes within the eye are not unusual. In June of last year, an elderly retired employee was paid for the loss of an eye resulting from an injury in January, 1953. A tiny, metallic intraocular foreign body had been successfully removed at the time, but a dense traumatic cataract subsequently matured. In other cases, the retention of small foreign bodies in the globe—ones that couldn't be removed—resulted in deterioration of the eye and the eventual total loss of vision. I could go on citing such examples almost endlessly.

Dr. Ganschow is medical director of the Chevrolet-Detroit Gear & Axle and Forge plants.

ONE CAN'T PREDICT WHERE OR WHEN THEY WILL OCCUR

In our own plants, two accidents during a single week in 1953 resulted in loss of vision in one eye in each instance and supplied the impetus for our eye-protection drive. The two men had worked on the same job, putting together brake assemblies. It involved the use of no power-driven tools, but two brake shoes were struck together sharply, and a tiny chip flew off in each instance and perforated the worker's eye. Here was a job in which a survey by the Safety Committee would certainly have revealed no hazards, yet the Medical Department and the Safety Department not only had indicated the desirability of eye protection for the men engaged in it, but had actively advocated that the wearing of glasses be made compulsory for them. Management cooperated in establishing the program.

VOLUNTARY PROGRAMS WON'T WORK

Before the wearing of glasses was made compulsory throughout the plants, chiseling on eye protection was the accepted practice. Ordinarily prudent, careful workmen accepted it as their God-given right to ignore this means of safeguarding their personal well-being. I have seen a capable, cooperative maintenance employee blithely breaking holes in a concrete floor with a star drill and a hammer, and kneeling over his work but wearing no glasses. Because they had neglected to take this precaution, some of our supervisors have seriously injured their eyes on hazardous jobs at home. One recently lost an eye while tacking a carpet. Safety glasses usually are absent from home workshops equipped with power tools and presenting hazards that wouldn't be tolerated in the plants.

Prior to the mandatory program, safety glasses had been available to any employee who requested them, and their use had been encouraged. Specific jobs and areas that were obviously dangerous were "posted for glasses." Usually, after significant eye injuries, the investigation report of the accident closed with the recommendation that glasses be worn in the operational area. There was a constant educational program for eye protection included in the foreman-employee safety talks, booklets and vivid safety posters. The results were not startling. Enforcement of regulations was difficult because of changing work assignments and haphazard attitudes. Few of the employees and even few of the supervisors wore glasses voluntarily—probably not more than 20 per cent.

GLASSES MUST BE REQUIRED THROUGHOUT EACH PLANT

Apparently the only efficient technic is to insist upon the constant wearing of glasses and to back up that regulation by adequate disciplinary methods. Thus, a plan was formulated whereby all employees, including supervisors, would be re-

quired to wear safety glasses on and after February 15, 1954. The rule was made to apply to any person who entered the plants for any reason, and to persons engaged in outdoor work around the plants.

Supervision was the first group for which eye protection was required at all times and in all plants. Supervisory meetings were called so that the need, intent and scope of the program might be explained to the supervisors, and so that their cooperation might be enlisted. Within one or two weeks following the application of the rule to the supervisors, selected groups of hourly-rated employees were also issued glasses, together with instructions regarding their use. Finally, the remaining employees were brought into the program.

There were scattered objections, but after the workers had worn the protective devices for a brief period under duress, the practice became automatic, and they forgot their objections. Furthermore, the discipline gave our Safety Department added prestige, and improved management-labor relations resulted when it was recognized that the program was for everyone's benefit. The management used salesmanship and sincerity in selling the program.

In my opinion, simple fittings and adjustments of glasses are adequate, and elaborate programs are unnecessary. The most important feature is that all working personnel have protective glasses and that they wear them. The glasses that we have for general distribution are ordinary, good-grade safety glasses in acetate or vinyl plastic frames. Slip-on shields are used on some jobs. The protective glasses are not unattractive, and ordinarily would not be distinguished from many of the pairs of glasses customarily worn by the public. The term *goggles* carries an unpleasant connotation of bulky, ugly spectacles, and for this reason is not used.

Refinements such as plastic lenses and special frames may be excellent, and in some cases necessary. For purposes of economy and simplicity, we have avoided any but our standard frames wherever possible. We have also found no economy in using cheaper, bargain glasses, for frequently they are defective in quality and consistently wear poorly.

Chafing and irritation about the nose and ears have been an annoyance to some employees, but to my knowledge there have been no cases of allergic sensitivity. There have been no situations in which we have been unable to fit an employee with glasses that he could wear comfortably after the date when the mandatory wearing of glasses became official. A few chronic complainers alleged that their vision was being ruined and reported bizarre symptoms such as headaches, dizziness, etc. These troubles disappeared.

Safety glasses are issued as personal equipment to each employee who enters the shop on a tool

check, and he cannot enter the plant without them. In case he has forgotten or misplaced his glasses, he can check out a pair from the Personnel Department before his shift. Replacement glasses in glassine envelopes are available at the tool cribs, and can be exchanged for defective or worn glasses.

Lens tissues for cleaning glasses are available in the usual handy pull-out dispensers throughout the plants. There is no indication that glasses have been abused by more than normal wear and tear.

A weekly visit is made to each plant by a person capable of making desired fitting adjustments. These fittings are also done, at any time, in the Safety Office where glasses are cleaned and repaired. Substantial additional savings have been made possible by salvaging and repairing usable parts. A sizeable suggestion award was made to our repairman for devising some simple fixtures for such repairs. Good maintenance in replacing pitted lenses, discolored and worn parts, etc., is important.

FORD PROVIDES PLAIN OR PRESCRIPTION GLASSES FREE

Since July 1, 1955, the company policy has been to furnish prescription safety glasses without cost to the employee, other than the charge for his refraction. Employees are free to have their refractive studies and measurements for glasses made by the person of their choice. The employees are given a standard, printed letter along with the prescription blank to be filled. The letter briefly explains our program to the doctor and tells him of our interest in his patient's well-being. It emphasizes that we don't wish to interfere with the doctor-patient relationship, and that we encourage the employee to return to his doctor for a recheck following the issuance of his glasses. To date, there has been no antagonism to our program. Rather, we have had only favorable comments and letters. Again, for purposes of simplicity and uniformity, our major supplier of prescription glasses has been one of the large optical manufacturers who uses the standard frames and approved lenses. Most of our employees wear their prescription safety glasses not only at work but as their regular glasses. My personal glasses and those of my family are these hardened lenses. I would recommend them for children and for adults who work around their homes.

The enforcement was not difficult when the policy was uniform and when the employees realized that management was determined to make the scheme work and was constantly vigilant in its efforts to succeed. Corrective discipline for violations was consistently applied where it was indicated. There were some grievances filed through the regular labor-relations channels, but union leaders refused to pursue the grievances when they had been convinced that the program was intended to protect the employee's safety.

THE PLAN HAS PROVED HIGHLY WORTHWHILE

The immediate results in reduction of eye injuries appeared to be gratifying, but as no factual, comparative, before-and-after data had been compiled, a review of the available records was made. Our manhours worked have remained fairly consistent over the period reviewed. Two sources of information were used—Compensation Department records and Medical Department records. All those cases in which the Compensation Department had made payments for eye injuries were selected, for it was assumed that these would include all of the more serious injuries. A total of 177 such cases were located, from 1923 to June 1, 1958, and of these there were 63 that involved payments for blindness in one eye. There were no cases of blindness in both eyes.

The statements made at the time of injury in regard to the cause indicated a distressing number of similar injuries in cases involving permanent loss of vision. It was noteworthy that many of the accidents had occurred during the use of hand tools. Here are a few examples: "I was pounding nails, and a nail flew and hit me in the eye." "Another man was driving rivets in drums, and one went wild and hit my eye." "I was watching three workmen trying to get a spring in a cross member when something hit me in the eye." "I was putting a drill in the press when I tapped it with a brass hammer and something struck me." "A piece of breaking punch struck my eye."

Fifty-five of the 63 eyes (83 per cent) were blinded by small foreign bodies. In the 114 cases where compensation payments were made but blindness didn't result, 93 eyes (81 per cent) were injured by foreign bodies. Most of the particles were tiny, high-velocity metallic missiles produced by the impact of two hardened surfaces or by sudden stresses or breakage of such surfaces. These are exactly the sort of materials for which the frontal protection of a safety glass is designed and is effective.

From an examination of the records, it appears that safety glasses might have prevented 56 of the 63 cases of lost vision, and would not have been effective in 7 cases. Safety glasses might have prevented injury in 103 of the 114 cases of eye injury involving compensation but not resulting in loss of vision. They would not have furnished protection in 11 cases.

No, our eye-protection program and its enforcement have not been perfect! Nor do we expect perfection. But in going back over a period of time equal to that which has elapsed since the start of the program, we found there were 11 eyes lost prior to the program, and only one eye lost since its start. This 11 to 1 ratio is certainly more than coincidence.

Since the adoption of compulsory protective glasses, there has been only a single eye injury resulting in blindness. In that instance, although

the worker allegedly wore his glasses, they were not damaged. A large metallic foreign body deeply perforated the globe in such a manner that the injury as described could hardly have happened if the worker had been wearing them.

In 1957, one other employee had an eye injury that resulted in no permanent impairment, but entitled him to receive a temporary disability compensation, the payment amounting to the odd sum of \$13.13. This and the questionable case that I just mentioned are the only two cases of eye injury in which compensation has been paid since the inception of the compulsory eye-protection program on February 15, 1954.

The payments involved in the injuries to eyes do not present a true picture, however, since the earlier cases of blindness entitled a worker to receive a specific payment of only \$1,400. A more realistic amount is now awarded. Since 1923, the total cost of compensable expenses for all eye cases has been in excess of \$200,000.

The other records used were those of the Medical Department. Each visit that an employee makes to a dispensary is recorded immediately in his personal medical file. In addition, those visits occasioned by a more than minimally significant injury or by a mishap traceable to a hazardous condition are recorded on a detailed report form. These latter reports from January 1, 1950, to June 1, 1958, were reviewed.

In 1950, there were 183 reports, of which 158 concerned injuries to eyes and 25 with damage to glasses alone. Each successive year the number remained about constant until February 15, 1954, when the new safety glass program was installed. Thereafter, there was an immediate and dramatic drop from the previous rate of 100 eye injuries per year. Here are the figures for the succeeding years:

1954	8 eye injuries
1955	22 eye injuries
1956	11 eye injuries
1957	6 eye injuries
1958	7 eye injuries

Meanwhile, the reports of damaged glasses alone have shown no appreciable change. There have been no further accidents reported from June 1, 1958, to the time of my writing this report.

Before examining the records, I was of the opinion that many factors played a role in eye injury, but I was in error. For example, it seemed likely that age might be an important factor, but although the younger injured employees apparently had made a greater impression on the medical staff, the records showed that injuries had occurred in all age brackets. Similarly, no correlation could be found between eye injuries and the shift worked, the type of work, the years of experience in the plants, the previous state of visual efficiency, or status (skilled or unskilled, and hourly-rated or salaried).

Jobs in which there are obvious eye hazards, such as welding, shot or sand blasting, or grinding, had not produced any serious eye injuries. Burns, irritants, chemicals and airborne particles also had produced few eye injuries. No industrial blindness had occurred because of infected wounds. Production and assembly work, in their normal operation, had not produced injuries. Direct trauma, as seen in a hook striking the eye, had produced serious injuries, but their number had been comparatively small. Serious eye injuries in these plants, as mentioned previously, had nearly always been produced by small metallic fragments flying at high velocity, produced by sudden impact, stress or breakage. These factors are not peculiar to special jobs.

Beginning on July 1, 1955, prescription glasses were entirely paid for by the company. Prior to that date, the company had paid only part of the cost and furnished an average of only 75 or 80 pairs of prescription glasses annually. Since starting to pay the entire cost of glasses, the company has furnished increasing numbers of pairs—more than 10 times as many. In 1956, it purchased 994 pairs of prescription glasses; in 1957, 941 pairs; and in 1958, 877 pairs. The total cost of such purchases, in 1958, was \$32,200, at an average of \$11.45 per pair.

The Accounting Department has provided these additional figures for our eye-protection program since July 1, 1955. There were 12,233 regular pairs of safety glasses purchased at a cost of \$23,900, and \$19,700 was spent for lenses and parts. For the three years from July 1, 1955, to July 1, 1958, a grand total of \$75,800 was spent, or an average of only slightly more than \$25,000 annually for more than 8,000 employees. A comprehensive eye-protection program thus costs less than \$3.00 per employee per year. This is a very small amount to pay for protecting the eyes of our employees.

MOST PLANTS NEED SUCH PROGRAMS

Obviously, the experiences and facts that I have quoted and the inferences that I have drawn from them relate only to the particular type and size of industry that I have observed. Adaptations may be necessary to fit the hazards found in other types of industry. Information published by the National Safety Council and the Society for the Prevention of Blindness indicates that many industries have a much higher eye-accident rate, and that the percentage of compensable eye injuries in small plants may be as high as 10 or 15 per cent of the total compensation cases, whereas it is as low as 2 per cent in the large plants. They also indicate that 3 to 4 per cent of all compensation costs are for eye injuries, and that eye injuries comprise 7 per cent of the total accidents.

The question logically follows: "How shall I introduce a program of this type in my plants?" First, you must convince yourself that there is an actual hazard to eyes in your industry, and deter-

mine the extent of the problem. How often one can hear the reply, "There is no such problem in our plants." In our own case, no one recalled more than a few of our eye injuries, and everyone thought that instead of 63 blinded eyes we could have had only a much smaller number—possibly 10 or 15. For this survey, I would strongly recommend that you do not depend on your memory or on your unsupported opinion alone. Rather, wait to pass judgment after seeing what the records actually show.

HERE ARE SOME SPECIFIC SUGGESTIONS

You must evaluate the risks and control them, and the basic control is the use of safety glasses. It is up to top management to provide the initiative and to set good examples. Then, management must sell the supervisors and leaders on the program, and lastly, sell the workmen. Eye accidents are unpredictable, and prompt action is indicated. A preventive program is particularly important in small industry, where there may be no formal safety program and where operations are apt to be more varied. Very likely, there is also no medical or nursing staff. There should be a continuous search for hazards such as mushroomed tools and inadequate guards. What caustic or toxic materials are used in the plant? What precautions are used in handling them? Is water available around caustics? Do the employees know the basic first aid rules about eye injuries? Is the lighting adequate?

Maintain good, usable records of eye injuries and of the workmen's previous eye conditions. Instruct your nurses and aid personnel in the procedures that should be used in handling eye injuries. Keep a working relationship with a capable ophthalmologist who understands the problems of compensation and working conditions, and use him. Be certain to give him adequate, careful histories. It is much better to refer to him injuries that are minor, than to have tragic results or court cases. Small eye wounds are sometimes perforating. Be certain that x-rays have been taken to rule out foreign bodies. Particularly, insist on adequate follow-up medical care. Check for the possibility of cross-infection among your working people and in your aid stations.

Eye injuries are expensive experiences. They should be reviewed so that medical personnel can get as much advantage as possible from past experience. Follow up the accidents; investigate them. Don't assume that statements made by employees are correct. Some conditions such as welders' flashes, electrical flash burns and dirt in the eyes reflect improper work procedures. Find out why they happened, and avoid recurrences.

It's discouraging to see workmen who have had eye injuries working on selected jobs far below their capabilities or undergoing personality changes that are detrimental. Even with all due

care, you can assume that the climate of compensation boards is such that awards will be granted frequently for non-occupational conditions such as subluxated lenses, keratitis, detached retinas, retinopathies, senile cataracts, etc. Industry is eager to take care of its own unfortunates, but dislikes being held responsible for eye pathologies from non-occupational causes.

THERE ARE SOME INCIDENTAL BENEFITS

In addition to eye protection, we can point to extra dividends that accrue from a safety glass program. When it became apparent that they would be required to wear glasses, many of our employees were examined by qualified ophthalmologists and were provided with proper refractions. Thus, their vision was benefited for both work and pleasure. At the same time, we became concerned over the visual fitness of employees on jobs involving close tolerances and on hazardous jobs such as truck-driving and crane-operating. Plant-protection men were also scrutinized. There is now a routine check at regular intervals for these people, in which standard vision-testing aids are used. Lighting facilities throughout the plants were also examined and improved.

While we were checking the daily medical visits to determine the numbers of calls involving eye conditions, we found that some employees were making dispensary visits routinely for eye complaints. In consequence, we were able to eliminate many unnecessary visits concerning eyes, at a large saving. We also had a sharp drop-off in the number of claims that inflammatory and degenerative changes or other ocular manifestations had resulted from workers' employment. It is logical to assume that methods that worked for us would work elsewhere, and that information that we uncovered regarding eye safety would also apply in other plants.

CONCLUSIONS

1. Voluntary wearing of protective glasses and enforcement of rules requiring the wearing of glasses only on selected jobs did not materially reduce the incidence of eye injuries. Safety talks and educational leaflets were likewise ineffective.

2. A 100 per cent safety glass program can be installed and enforced; proper safety glasses properly fitted and worn will protect against most eye injuries.

3. Most significant eye injuries are caused by small, high-velocity metallic fragments produced by impact or stress and not typical of any particular kind of work.

4. There was a reduction in outside medical costs and compensation.

5. The big dividend is the satisfaction of knowing that reasonable precautions have been used to eliminate avoidable injuries.

Iowa Industrial Health Survey, 1957-1958

By the Committee on Industrial Health of the Iowa State Medical Society

FOR THE PAST SEVERAL years, the AMA Council on Industrial Health has put special emphasis on assisting the small plants of America in the field of industrial health. It has been apparent that a great majority of American working people belong to small employment groups, and most of them have never enjoyed the advantages to be found in the medical programs of most large corporations. It seemed that Iowa was quite representative of this range of employment, and two years ago the Iowa State Medical Society, through its Committee on Industrial Health, began its first real effort to assess the situation, and at the same time to inform employers of the measures they might take for the protection of their workers.

In choosing to use a questionnaire, the Committee hoped to suggest, particularly to the owners of the smaller plants, just what a program in industrial medicine includes, yet it realized that the advantages of any such plan, as well as the chances of getting one established, varied greatly with the size and type of employment.

The results of the survey have shown that very little was omitted from the questionnaire, and if it was at least read by nearly all of the 999 em-

ployers to whom it was mailed, one can take for granted that the Committee's educational objective was achieved. But the statistical summaries of the answers have been valuable, too.

This first state-wide occupational health questionnaire was sent to all employers of 50 or more persons in Iowa, and nearly 40 per cent replied. The Committee regards this as a highly satisfactory indication of management's concern about the problems in this field.

TECHNIQS USED IN MAKING THE SURVEY

The state was divided into districts (Figure 1), each representing an area of some industrial concentration. A local committeeman was assigned to each of them, and he was made responsible for results from his area. His personal knowledge of the local industries and his use of his own chamber of commerce were very effective. In general, as it turned out, the larger the city, the smaller was the percentage of returns, but the variations were not great. In at least two districts, over 50 per cent of the employers replied.

One of the Committee's most difficult tasks was that of compiling an accurate mailing list. The

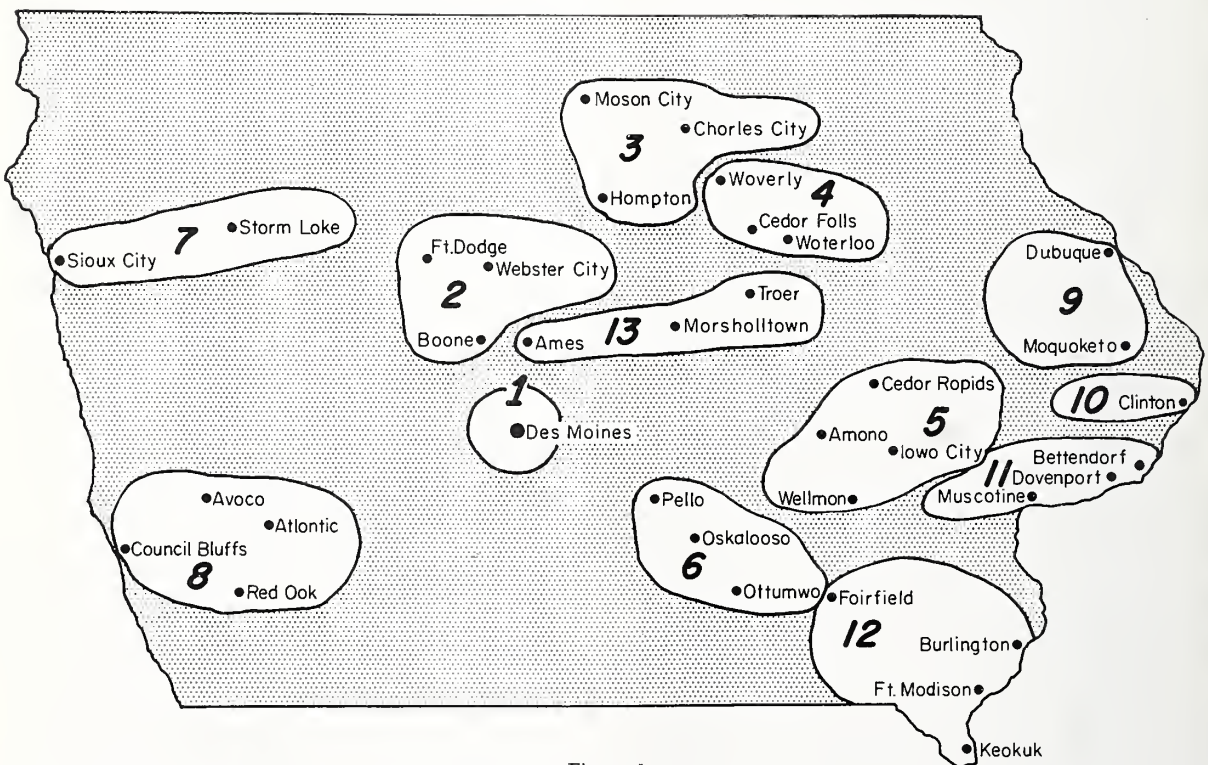


Figure 1

very fine tabulation of Iowa manufacturers that had been published in 1955 by the Iowa Development Commission was extremely helpful. For each city having a population of 10,000 or more and for each smaller town known to have at least one industry employing more than 250 people, the Development Commission's list was brought up to date by checking with all local chambers of commerce for the names of the firms having 50 or more employees. The groups that made up the final list included many non-manufacturing ones—utilities, construction and transportation firms, wholesale and retail organizations, and school teacher, hospital employee, and city and county government worker groups. A great deal of telephoning and letter writing was entailed.

The questionnaires were sent out from and were returned to the office of the Iowa State Medical Society, but the tabulations were made by Mrs. E. A. Larsen, of Centerville, the energetic wife of the chairman of the ISMS Public Health Committee.

CLASSIFICATION AS TO TYPE OF EMPLOYMENT

Figure 2 shows the types of employment represented in the questionnaires that were returned. The workers in some of these organizations are not subjected to the physical hazards that are

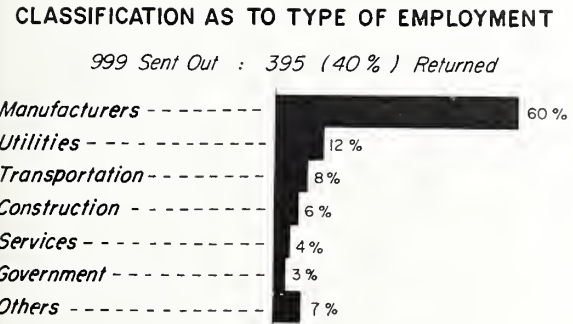


Figure 2

involved in manufacturing. However, the employers in all instances have identical responsibilities under the compensation laws, and suffer much the same financial losses as a result of non-occupational disabilities. Of the 395 replies, 60 per cent were from manufacturers, but of the 598 manufacturers to whom questionnaires were sent, 42 per cent were returned—only slightly more than the percentage for the other groups combined.

MAKE-UP OF EMPLOYEE GROUPS

Figure 3 shows a breakdown by size of plant and the proportions of men and women among the employees. As is quite understandable, the numbers of replies varied directly with the sizes of plants—i.e., a greater share of large organizations than of small ones answered the questionnaire. Over 120,000 individuals were covered in the replies received.

It was surprising to find that the percentages of women employees varied little with the sizes of plants. The Iowa figures would seem to be near the accepted national average. If, as most people agree, the problems of the home fall principally upon the housewife, then many of the women seen either by the family physician or by the company doctor are really holding down two jobs, one or both of which may be quite difficult. When nearly one-third of the working population consists of women, many of whom have families, it would seem that insufficient study has been given to the costs of their absenteeism, to the number of their compensable disabilities, to the psychosomatic status of each individual herself, and—perhaps most important—to the effect that the mothers' absence may have on the homes from which they come.

It is fortunate that the Committee asked, "Are you a branch plant of a larger corporation?" For that question elicited a number of interesting replies. Only 125 answered it, and it would seem

CLASSIFICATION BY SIZE OF EMPLOYMENT GROUP

	A	B	C	D	E	F	Totals
No. of Employees	50-100	100-200	200-500	500-1000	1000-2000	2000 +	
No. of Plants Replying to Questionnaire	172	96	69	32	19	7	395
Total No. Employees	12,070	14,538	19,760	19,586	27,207	27,859	121,020
% — Men	68	71	70	63	83	67	70
% — Women	32	29	30	37	17	33	30
No. of Iowa Establishments	32	34	25	13	14	7	125
That Are Branch Plants	18 %	35 %	36 %	40 %	73 %	100 %	32 %

Figure 3

that unless the answer were affirmative, the question was frequently left unanswered. Because, as has been mentioned, replies were sent by a higher percentage of large employers than of small, and because it appears that more of the large plants than of the small are branch operations, the overall 32 per cent indicated by the survey is probably too high, and yet many of Iowa's so-called "small" industries are parts of interstate companies. It can be seen from column F that every one of the replying companies in the largest class indicated that it is not independent.

At present, the Committee believes, the greatest stimulus to small-plant medicine is the increasing geographical spread of large corporations. Many have built or acquired facilities throughout the Middle West, bringing with them planned medical programs, frequently guided by experienced medical directors. But more often than not, in such cases, the medical programs are organized and directed from afar, and their real success rests upon the Iowa doctor or doctors who actually operate them. Each one is dependent upon the knowledge and enthusiasm of a local physician, working with the personnel director and the manager of the branch plant, and having the friendly cooperation of his colleagues in the medical profession of the community. In this respect, the branch plant has no advantages, and its costs can be no less than those of other occupational groups in the same area. The small independent employer would do well to map his program after those of branch plants of similar size whose methods have already been tried and proved.

FIRST-AID FACILITIES

In its questionnaire the Committee asked, "Do you have more than the so-called cigar box first-aid-kit facilities?" Figure 4 shows that only 20 per cent of the group of smallest plants answered affirmatively, but ever greater shares of the larger and larger plants answered "Yes"—51, 58, 94, 100 and 100. Over all, 46 per cent of the answers were affirmative.

To the question, "Do you have facilities for the care of the minor medical complaints?" affirmative answers came from 26, 54, 81, 89, 85 and 100 per cent of the plants grouped according to increasing



Figure 4

sizes. Overall, "Yes". replies to this question were given by only one half of the firms replying.

INDUSTRIAL NURSES

The trained nurse plays a remarkably important part in the small-plant medical picture, and yet the Committee's survey (Figure 5) disclosed only 61 full-time nurses in this field—far fewer than are employed by each of several large corporations in this country. Eleven graduates provide part-time service, and 23 presumably have had some special industrial training. Certainly, the great majority gain their experience on the job. Every industrial nurse needs and desires the supervision of an appointed company doctor, no matter how brief a time he may spend in the plant. For any young lady interested in nursing and in this type of employment, the field is wide open.

Figure 6 charts the answers to some questions that the Committee asked regarding materials and instructions available to industrial nurses or other persons who administer first aid. A few simple medicaments such as are found in a home medicine cabinet—for treating conditions about which the individual would be unlikely to consult his doctor—would seem indicated, and yet in only

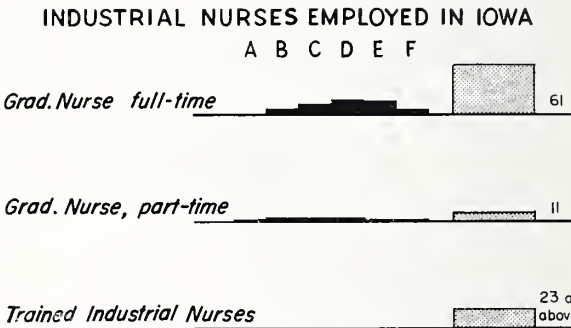


Figure 5

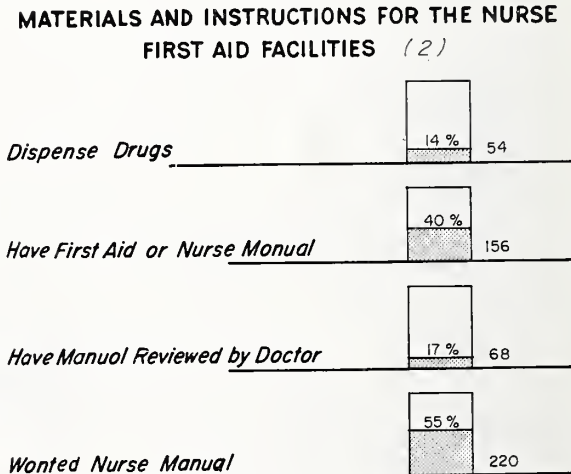


Figure 6

14 per cent of the plants were such available. The figures for the different sizes of plants follow the range that might have been expected.

The use of a first-aid or nurse's manual would indicate real effort on the part of small-plant managements to handle their emergencies in the best possible manner. Such instructions should be reviewed by a physician and revised so as to make them appropriate for the type of employment involved, and as evidence of such review and adaptation, they should bear the doctor's signature. In its questionnaire, the Committee asked whether such instructions had been made available, and whether they had been examined and endorsed by a doctor, thus suggesting the wisdom of that procedure. The doctor's signature not only provides some assurance of the adequacy of the instructions, but protects the nurse or layman who dispenses an aspirin or a laxative from being accused of practicing medicine, since when the doctor has signed the instructions, they have become the doctor's orders. In 1955, the ISMS Committee on Industrial Health had compiled a set of instructions for industrial nurses and had distributed 2,500 copies throughout the state. Of the firms replying to the 1957-1958 questionnaire, 220 (55 per cent) expressed a desire for copies of that booklet. The requested copies have subsequently been mailed.

INDUSTRIAL PHYSICIANS

Figure 7 shows that 125 of the replying companies have company doctors. If failure to answer that question were considered a negative response, one could conclude that only 31 per cent of the firms that answered the questionnaire have definitely-appointed company physicians (12.5 per cent of all those to whom the questionnaire was sent).

The Committee thinks that its question about full-time plant physicians must have been misunderstood, for as Figure 7 shows, 25 firms an-

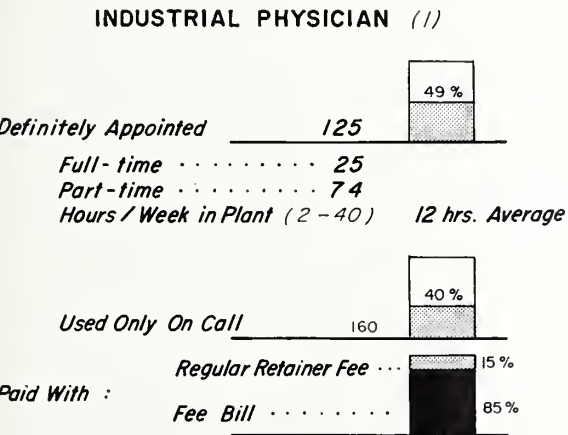


Figure 7

swered "Yes," and it believes that there are fewer than that many doctors in the entire state each of whom is employed full-time by a single company.

It has been emphasized repeatedly that some in-plant visits are essential to an efficient medical service, even if such visits total no more than two or three hours a week. By distributing his time carefully, the physician can give this type of service to a number of small plants, besides carrying on a private practice.

Most men, the survey responses showed, are paid by the hour for such work, and the small percentages that it showed were paid retainers is indicative of how little this mode of payment is used. Surprisingly few firms indicated that they paid doctors by both methods.

CHOICE OF PHYSICIAN

Figure 8 charts the affirmative answers given to each of an interesting series of questions:

"In company-doctor relationships, would in-plant visits better acquaint the physician with the nature of the employer's work?"

"In case of an on-duty injury or an occupational illness, is the physician chosen by () Employer? () Employee? () Insurance company?"

"Do you have a clear understanding of Iowa laws as to choice of physician in compensation cases?"

"Do you use other than M.D.'s in treating compensation cases?"

The fact that 42 per cent answered the last of these questions affirmatively should interest all those who feel strongly either way on this controversial issue.

Three years ago, the Iowa State Medical Society sent out a questionnaire to all its members relative to their interest in industrial work. From the comments contained in the replies, it was evident that there were divergent interpretations or misunderstandings of the law governing choice of

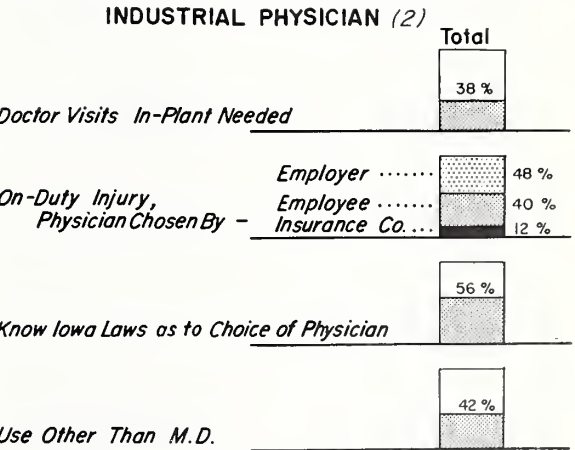


Figure 8

physician in compensation cases. Thus, though 44 per cent of the employers who answered the Committee's later questionnaire were willing to admit that they had no clear knowledge of the statutes, many doctors had been no better informed about them.

It is therefore appropriate that an explanation of the laws contained in a letter from the Iowa State Industrial Commissioner, Mr. Earl R. Jones, addressed to the chairman of the Committee, should be quoted here in its entirety:

Dear Dr. Lohmann:

Your letter of October 1 has been called to my attention for answer. The principal question raised by your letter is, "Who has the choice of physician in compensable injuries and illnesses?"

Note: The department follows the general rule adopted by various states under the workmen's compensation acts that the right to choose the medical or surgical attendant and the hospital is usually in the first instance with the employer—and the injured employee cannot recover for unauthorized medical services incurred by him while declining without good reason the services so rendered—provided the offer is unequivocal and reasonable—and is also adapted to the treatment of the injured employee, because he is not bound, in spite of inconvenience and greater expense, to accept any tender.

I recognize that the American Medical Association and, in the main, a great many state and local or-

ganizations, stand firm on the basis that the right of the employee to select his attending physician should be maintained, and it is my personal feeling that this situation is the ideal one. However, for many years prior to my becoming the Industrial Commissioner of this state, the department followed the general rule above quoted, and while I have not changed the rule I have tempered the rule somewhat by stating that this rule must be followed with some degree of reasonableness. In other words it is my firm belief that where there are two doctors of equal qualification, one desired by the employer, and the other by the employee, that it is more reasonable to assume that the employee will be better satisfied with the physician of his choice—and in such circumstances our department has tried to go along.

The principal objectors, of course, to this plan are the employers and the insurance carriers that believe it is more difficult to obtain periodic reports from many doctors who are not in the habit of handling industrial disabilities.

I trust that this information will be of help to you and your committee, and I greatly appreciate your inquiry, and wish to assure you that if I can be of any further help that you will call upon me.

Very truly yours,
Earl R. Jones
Industrial Commissioner

PLANT SAFETY PROGRAMS

Figure 9 charts the answers to seven questions pertaining to preventive medicine—plant hygiene, sanitation and safety—and it further points up the differences between conditions in large and small plants. "Yes" answers to the question, "Do you make regular plant studies or inspections of accident or health hazards?" were returned by 51 per cent of the small plants (50 to 100 employees), and by 100 per cent of the large ones (1,000 employees or more).

"Yes" answers to the question, "Do you use methods of health education, such as pamphlets, movies, etc.?" were given by 23 per cent and 92 per cent, respectively.

The next question was, "Do you use outside consultants relative to plant hygiene, sanitation and safety?" Many large factories have their own safety engineers and industrial hygienists, yet even here there was much the same difference between the answers given by the managements of large and small plants. Sixty-five per cent of the large firms responding said they use such outside help, and only 20 per cent of the small ones said they did, and it is in the small plants that such services would seem to be most needed. Only 28 per cent of employers in Group A indicated that they were "aware that such consultants are available and know how to obtain their services," whereas 100 per cent of employers in Groups E and F said they did.

To the question, "Do you use any voluntary group diagnostic program such as TB screening?" "Yes" answers were given by 20 and 92 per cent,

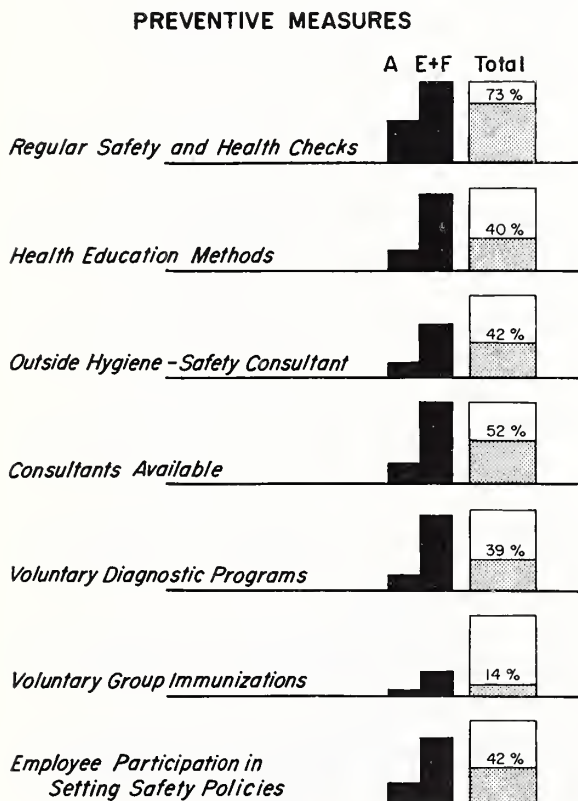


Figure 9

respective, or by 39 per cent of the total. Only 9 and 30 per cent (average 14 per cent) answered "Yes" to the question, "Do you sponsor any voluntary group immunizations such as the use of cold vaccines?"

As an index of labor-management relations, it is interesting that only 42 per cent of the employers who answered the Committee's questionnaire indicated that their employees are represented when health and safety policies are formulated. "Yes" answers were given by 80 per cent of the large employers and 23 per cent of the small ones.

EMPLOYERS AND THEIR EMPLOYEES' FAMILY DOCTORS

Many private practitioners of medicine are not in sympathy with the efforts being made in the field of occupational medicine, as they presently see them. Their attitude seems to arise partly from a lack of knowledge of the many employee health problems that managements face, and also from a lack of information on the efforts employers are making to do something about them. This attitude that many physicians hold shouldn't be taken as reflecting a selfish individualism or an unreasoning obstinacy. Rather, in their preoccupation with doing their own jobs well, doctors sometimes fail to acquaint themselves with the health problems that modern industries occasion, or are inclined to minimize the possibility that their patients' ailments may have resulted from materials or conditions at their places of employment. Furthermore, in their dealings with insurance companies or employers about ailments or injuries that are undeniable compensation cases, and also about non-occupational illnesses which result in absences from work or are covered by non-occupational health insurance, doctors may in some measure be justified in regarding particularized requests for diagnoses and prognoses as third-party interference in the practice of medicine. On the other hand, managements are being required to pay all or part of group health insurance premiums, and doctors have been slow to see and to make allowances for the extremely heavy burden that has thus been placed upon them.

So as to get some data to use in attempting to clarify doctors' thinking about the role of the private practitioner in industrial cases, the Committee asked employers several questions about their dealings with such physicians. Figure 10 summarizes their answers. An overall 71 per cent reported "good relations with the family doctor" (55 per cent of the small companies and 94 per cent of the large ones). Only 50 per cent of the large companies and 67 per cent of the small ones answered "Yes" to the question, "Do you accept the statement of the employee's physician as the sole criterion as to the cause and length of an illness absence?" Strangely enough, sufficient "Yes" answers were returned by the middle group

of employers to raise the overall average to 71 per cent. Only 50 per cent of the large employers said they "accept his opinion as to the capability of the patient to return to work after an illness," but again the overall percentage of "Yes" answers was higher—76 per cent. Much could be said regarding the employers' reasons for wanting their own doctors to examine such employees, particularly after long illnesses, but their attitude seems to have been summarized satisfactorily by the bulk of the large employers' answers to the next question. Eighty per cent of managements in the 1,000-employee-or-more class said they think the workers' doctors sometimes misuse their privilege of deciding when a man may return to work.

All of the employers in the large groups and over half of the total said they believe "it would be advantageous if the employee's doctor better understood the nature of his patient's employment."

EMPLOYERS' SHARE IN NON-OCCUPATIONAL HEALTH PROGRAMS

In answering the question, "Do you practice any system of home visits or telephone calls in checking on illness absences?" 80 per cent of employers in the large firms, but only 20 per cent of those in small ones said, "Yes" (Figure 11).

There is nothing misleading in the question, "Does your medical service treat other than minor non-occupational illnesses?" yet in the large-plant groups 34 per cent answered "Yes" to it. Except for a few who could have been expected to misinterpret the question, the Committee expected every employer to answer "No." It seems likely, therefore, that the apprehension of the 98 per cent of Iowa doctors who are private practitioners may in some measure be justified. More of them

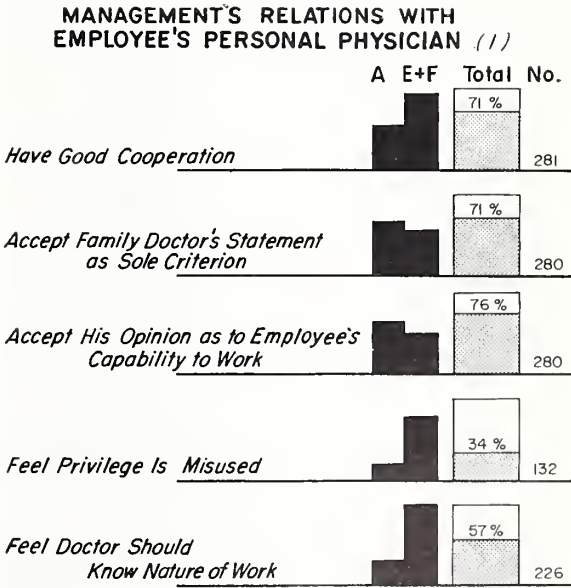


Figure 10

are needed, part time, to fill the needs of small-plant medical programs, but they are reluctant to enter a field, the purpose and scope of which aren't altogether clear.

When they were asked, "Do you ever treat employees on instructions from the family physician?" 40 per cent of the large employers answered "Yes." Facilities in small plants usually would be inadequate for such service, regardless of what the employer might be willing to do along this line. Perhaps the answers even of large employers to this question shouldn't be interpreted

as indicating a widespread willingness to participate in the treatment of their employees' non-occupational ailments except when so doing will keep their men at work uninterrupted. At least, unlike employers in some areas of our nation, Iowa firms don't generally undertake to provide all medical care for their employees and their employees' dependents. Only 6 per cent, of the companies answering the Committee's question on this point, indicated that they provide diagnostic service and medical therapy to members of their employees' families.

Employers were asked to estimate the percentage of their workers who, they thought, would say they had no family physician. Of those who answered, the estimates ranged from 10 to 70 per cent. In one plant that employs about 800 people, a rather accurate spot check was made, and about 50 per cent indicated they had no personal medical attendant.

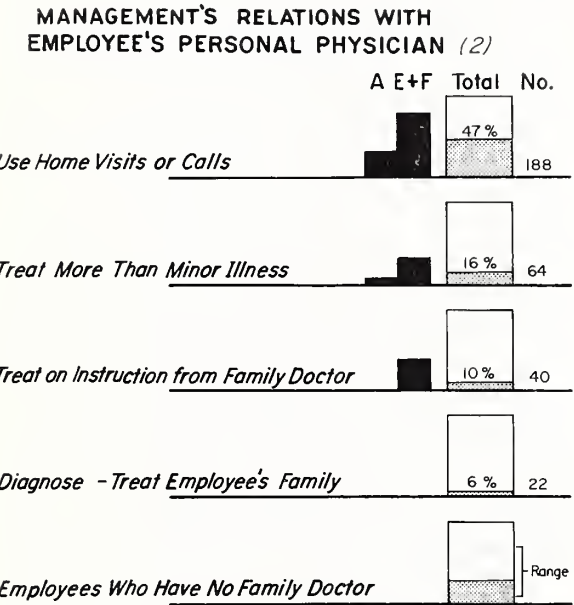


Figure 11

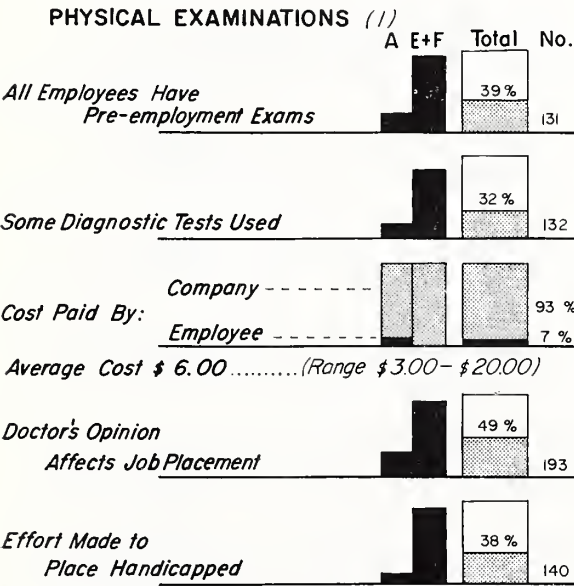


Figure 12

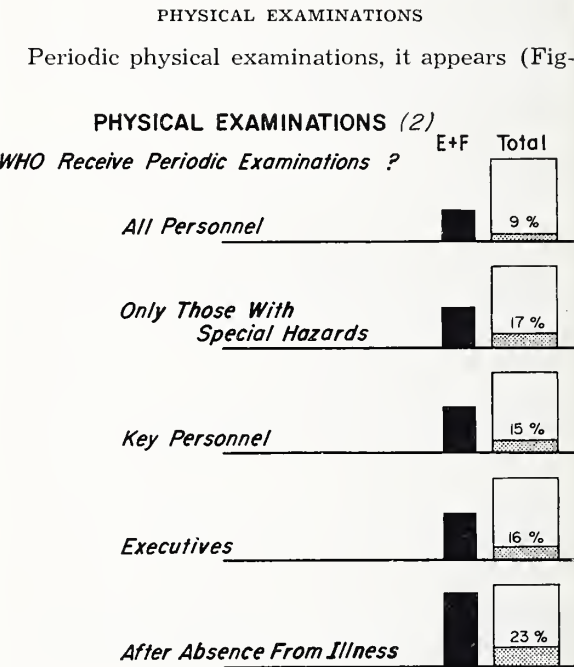


Figure 13

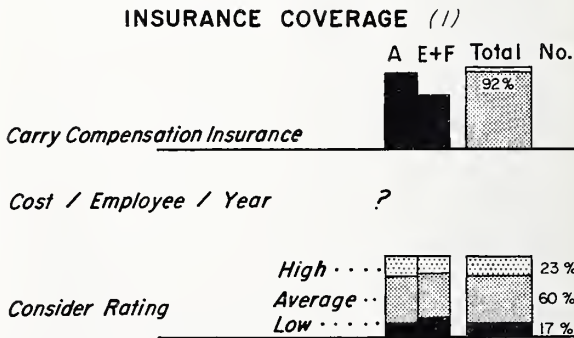


Figure 14

ure 13), are made "on all personnel" in 38 per cent of the plants employing over 1,000 people; on only "those with special hazards" in 50 per cent; "on executives" in 58 per cent; and on employees returning to work "after absence for illness" in 70 per cent. In a few companies, extensive yearly exams are made, including such things as chest x-rays, blood and urine examinations, electrocardiograms, etc., but who does the interpretations and how the findings are used to the advantage of the individual are questions about which there remains considerable doubt. In this area, again, there seems to be some justification for concern by county medical societies about possible encroachment upon the personal physician-patient relationship.

INSURANCE COVERAGE

Apparently some of the large companies are able to budget their own compensation costs, but as Figure 14 shows, 65 per cent of them, and as many as 94 per cent of firms in Group A place their risks in the hands of insurance companies.

Many employers did not try to state their "cost per employee per year," and thus Figure 15 contains no averages. For what such statistics may be worth, however, it can be mentioned that the overall average cost per employee per year came to \$30. The range was extremely wide—from \$7.50 to \$80. The companies with under 1,000 employees reported paying almost 10 per cent more than those with more than 1,000, the averages being \$35 and \$29, respectively. There was a negligible correlation between the size of a company and whether its management considered its compensation costs "high," "medium" or "low."

Figure 15 shows the percentages of firms which carry "non-occupational health insurance" on employees, either partially or wholly at company expense. Such programs were reported by 65 per cent of the firms in Group A; 81 per cent of B; 78 per cent of C; 90 per cent of D; and 96 per cent of E. As to the percentage of cost carried by the company, there was little variation. For all of the

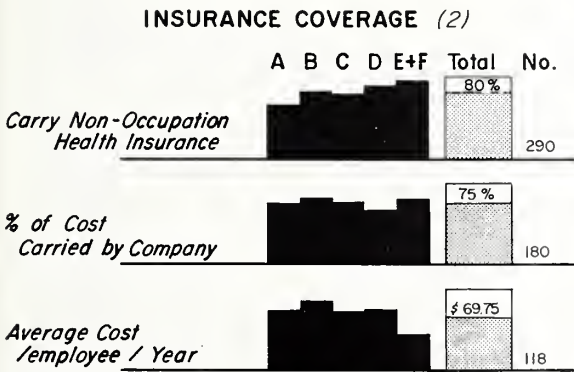


Figure 15

firms reporting, the average cost per employee per year was \$69.75, but for some reason it was only \$45.12 for companies with over 1,000 workers.

Figure 16 charts the "comparison between compensation insurance costs and non-occupational health insurance costs." Overall, employers reported that their non-occupational insurance expense was 35 per cent of the total, and there were only slight variations in the figures given by the different sizes of firms. In the plant previously referred to, the non-occupational health insurance costs last year were five times the compensation costs, however, amounting to about \$.55 per hour for each employee.

Seventy per cent of the employers agreed that "such insurance costs should be considered a part of fringe benefits." It would seem well to remember that no matter what per cent is paid by the company or how high the cost in terms of the benefits derived, most of the expense is passed on to the consumer.

The Committee was interested to learn that 47 per cent of the managements of companies employing more than 500 people thought that "better in-plant medical service might lower insurance

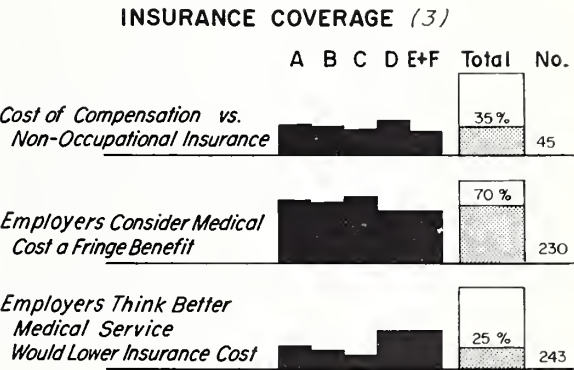


Figure 16

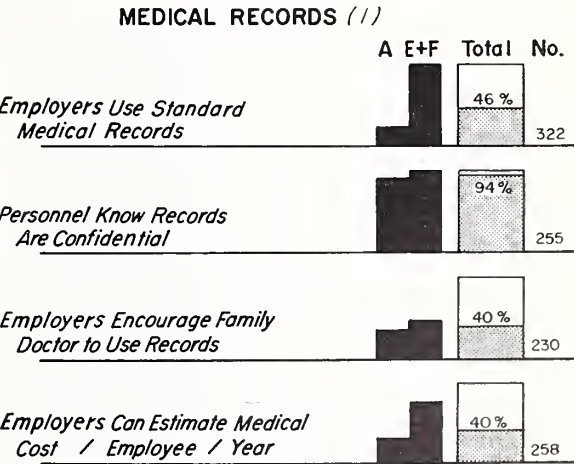


Figure 17

costs.” Overall, however, just 25 per cent of the replies gave this opinion.

MEDICAL RECORDS

All of the large industries and 23 per cent of the small ones reported using “some standard type of medical record on each employee” (Figure 17). Nowadays, when so many examination records and insurance forms pass through the hands of numerous personnel, the confidential nature of the employee’s medical record deserves repeated emphasis. It was good to learn that 90 per cent of the employers in Group A and 100 per cent of those in Groups E and F thought that this aspect of their employees’ privacy was being satisfactorily protected. Thirty-four and 46 per cent, respectively, said they “encourage the availability and use of medical records by employees’ personal physicians.”

The last line in Figure 17 and all of those in Figure 18 show the answers to a series of questions that the Committee asked as a means of suggesting the uses to which a company’s medical records can be put. Of the replying firms, 258 felt that their records were “adequate bases on which to estimate total medical costs per employee per year.” Thirty per cent of companies in Group A, and 85 per cent of companies in Groups E and F said so. Forty-nine and 96 per cent, respectively, said they are able to “rate lost-time accidents in usual rating,” and nearly as many could “rate absenteeism from non-occupational illnesses.” “Yes” answers to the question “If you increased your medical program would you be able to make a fair comparison of the costs and benefits under the new and the old program?” were returned by 90 and 51 per cent, respectively. It is understandable that 77 and 66 per cent thought “it would be

helpful in comparing averages with those of other companies.”

Figure 19 shows that 167 employers said they “would like to meet with interested doctors to discuss how industrial health plans can be improved.” The heading for the third line in the figure is probably an oversimplification of the employers’ answers to the question, “If some of the advantages experienced by large corporations were made available at comparable costs by use of part-time nurse and doctor, would such benefits to employees and company seem worth a trial?” Only 20 per cent answered the question at all, but 88 per cent of those who replied said, “Yes.”

Seventy-five per cent indicated that they would like copies of a summary of the results of this survey.

BLUEPRINTS FOR IMPROVING INDUSTRIAL MEDICINE.

It should be obvious that the Committee on Industrial Medicine of the Iowa State Medical Society, in its survey, has attempted to suggest some improvements that individual managements can introduce, as well as to elicit information about the present state of industrial medicine in Iowa. It tried to place proper emphasis on each part of a complete program.

The differences between arrangements in small and in large employment groups are self-evident. In some companies, a great deal of attention is given to one phase of the program to the exclusion of others. Many are using pre-employment examinations, but in many instances are making no follow-up studies of the individual employee’s physical and emotional status. Industrial medicine journals are filled with articles on such problems as “The Cardiac in Industry,” “The Diabetic on the Job,” “Visual and Hearing Losses in Industry,” and “Alcoholism Among Industrial Workers,” among others, yet workers in small plants aren’t being given the benefit of such research.

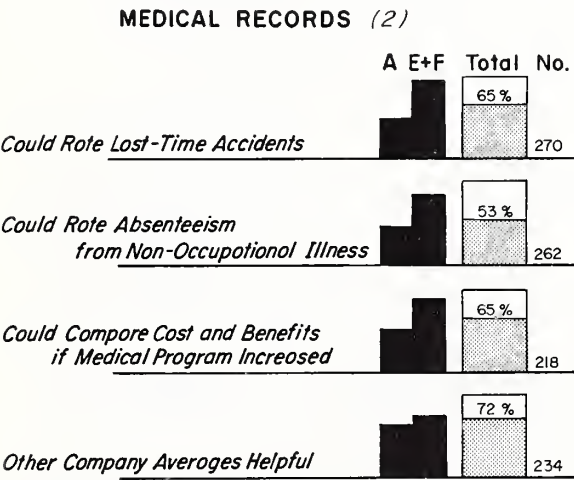


Figure 18

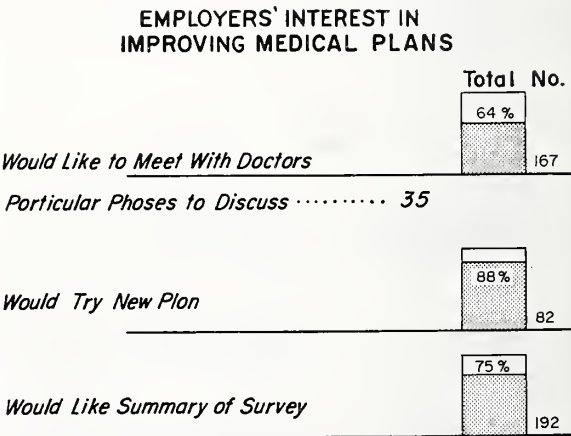


Figure 19

The Committee believes it is quite possible to bring a balanced industrial medicine program to such small occupational groups. With an intelligent understanding of what is to be done, success will come from a cooperative effort of all concerned.

The Hartford Plan, started in 1946, is a good way of setting up a medical service for several plants that are located within a community. Under it, a full-time doctor visits each of eight plants each day. Together they employ a total of between

3,500 and 4,000 workers, and each employs a full-time nurse.

The Committee's survey has revealed that there is a real need for an extension of industrial medical services in Iowa, particularly for the benefit of workers in small plants. In some localities, schemes on the order of the Hartford Plan may be practicable. The ISMS Industrial Health Committee should like to help get them started, in order that medicine may better serve the working people of Iowa.

INDUSTRIAL MEDICAL QUESTIONNAIRE

A. Classification:

1. Type of industry

Manufacturer
Construction
Transportation
Utility
Service
Government
Other

Yes

No

2. Approximate number of employees

Men
Women

3. Type of employment as to distribution

Branch plant of larger corporation
Total number of plants
Total number of employees

B. First Aid Facilities:

1. Do you have good facilities? (More than so-called "Cigar-box first aid kit")

2. Personnel

Graduate nurse, full-time?
Graduate nurse, part-time?
Nurse with industrial training?
Other personnel?

3. Facilities for care of minor medical complaints.

4. Do you dispense any drugs?

5. Do you use any type of First Aid or Nurse's Manual?

6. If so, has it been reviewed and signed by company doctor?

7. Would you like a copy of "Standard Procedures for the Industrial Nurse" as published by the Iowa State Medical Society?

C. Industrial Physician:

1. Do you have a definitely appointed physician?

Full-time
Part-time

If so, approximate number of hours per week spent in plant?

Is he used only on call?

2. How is he paid, on a regular retainer fee?

Fee bill?
Both retainer fee and fee bill?

3. In company-doctor relationship would in-plant visits better acquaint him with the nature of employees' work?

4. In cases of on-duty injury or occupational illness, is the physician chosen by:

Employer?
Insurance Co.?
Employee?

5. Do you feel you have a clear understanding of Iowa Laws as to the choice of physician in compensation cases?

6. Do you ever use other than M.D.'s in treating compensation cases?

	Yes	No
D. Preventive Measures:		
1. Do you make regular plant studies or inspections of accident or health hazards?	_____	_____
2. Do you use methods of health education, pamphlets, films, etc.?	_____	_____
3. Do you use outside consultants relative to plant hygiene, sanitation or safety?	_____	_____
4. Were you aware such consultants are available and how to obtain their services?	_____	_____
5. Do you ever use any voluntary group diagnostic program such as Tbc screening?	_____	_____
6. Do you do any voluntary group immunizations as cold shots?	_____	_____
7. Do you use employee representation on health & safety policies?	_____	_____
E. Employee's Personal Physician:		
1. Do you feel you have good cooperation with the family doctor?	_____	_____
2. Do you accept statement of employee's physician as sole criteria as to cause and length of illness absence?	_____	_____
3. Do you accept his opinion as to the capability of patient returning to work?	_____	_____
4. Do you feel this privilege is sometimes misused?	_____	_____
5. Would it be advantageous if employee's doctor better understood the nature of patient's employment?	_____	_____
6. Do you practice any system of home visits or telephone calls as to absence from illness?	_____	_____
7. Does your medical service treat other than minor non-occupational illness?	_____	_____
8. Do you ever treat employees on instructions from the family doctor?	_____	_____
9. Do you ever diagnose or treat members of his family?	_____	_____
10. Give your estimation of percentage of employees who would indicate they have no family doctor.	_____	_____%
F. Physical Examinations:		
1. Do all employees have pre-employment physical examinations?	_____	_____
2. Do your examinations include:	_____	_____
	Urine tests	_____
	Blood counts	_____
	X-ray of chest	_____
	X-ray of back	_____
	Tbc skin test	_____
	Other	_____
3. Are some diagnostic tests used only in selected cases?	_____	_____
4. Who pays for the examination?	_____	_____
	Company?	_____
	Applicant?	_____
5. What is average cost of examination?	\$ _____	_____
6. Does the doctor's opinion enter into job placement?	_____	_____
7. Is effort made in job placement of the physically handicapped?	_____	_____
8. Do you make periodic physical exams on all personnel?	_____	_____
	Only those with special hazards?	_____
	Key personnel?	_____
	Executives?	_____
	After absence from major illness?	_____
G. Insurance Coverage:		
1. Do you carry compensation insurance?	_____	_____
2. Cost per employee per year?	\$ _____	_____
3. Do you consider your rating as:	_____	_____
	High?	_____
	Average?	_____
	Low?	_____
4. Do you carry non-occupational health insurance?	_____	_____
5. What per cent of cost carried by:	_____	_____
	Company? % _____	_____
	Employee? % _____	_____
6. Average cost of non-occupational insurance per employee per year?	\$ _____	_____
7. In approximate %, how do your compensation insurance costs compare to non-occupational costs?	% _____	_____

	Yes	No
8. Do you consider medical costs as fringe benefits?	_____	_____
9. Do you believe that a better in-plant medical service might lower your insurance costs?	_____	_____
H. Medical Records:		
1. Do you use standard type medical records on each employee?	_____	_____
2. Does company personnel recognize the confidential nature of employee's medical records?	_____	_____
3. Do you encourage the availability and use of medical records by the employee's personal physician?	_____	_____
4. Are your records adequate to estimate the present total medical costs per employee per year?	_____	_____
5. Are you able to rate lost-time accidents in usual rating?	_____	_____
6. Are you able to rate absenteeism from non-occupational illnesses?	_____	_____
7. If you increased your medical program would you be able to make a fair comparison of costs and benefits with the old program?	_____	_____
8. Would you find it helpful in comparing averages of other companies?	_____	_____
I. Improved Medical Plans:		
1. Would you care to meet with interested doctors of your community to discuss together how industrial health plans can be improved?	_____	_____
2. Are there particular phases of the subject you would like to have discussed (indicate below)?	_____	_____
3. If some of the advantages experienced by large corporations were made available at comparable costs, by the use of part-time nurse and doctor, would such benefits to employees and company seem worth a trial?	_____	_____
4. Would you like a summary of this survey when completed? (If so, give name and address under "Remarks.")	_____	_____

Remarks:

Pregnancy Test

A highly accurate method of testing for pregnancy which requires no laboratory work was described to Louisville family doctors at an invitational symposium sponsored there by the Jefferson County Chapter of the Kentucky Academy of General Practice on May 15. Dr. Harold A. Schwartz, chief of obstetrics and gynecology at the Baroness Erlanger Hospital, Chattanooga, told of experiments he has been conducting since 1946 with the administration of progesterone for that purpose. When a woman has missed her period and has reason to believe she is pregnant, he gives progesterone to her for three days and then withdraws it. If she is pregnant, the hormone helps implant the ovum properly, but the patient is unaware of any change. If she is not pregnant, menstrual bleeding begins a few days after the last dose of hormone. Thus the hormone plays a dual role: it signals the absence of pregnancy and at the same time causes the menstrual cycle to return to normal. Tablets produce an answer to the pregnancy question more rapidly than injections do, Dr. Schwartz said, and therefore are best for testing purposes. The tablets, called Pro-Duosterone, combine a small amount (0.03 mg.) of estrogen with

50 mg. of progesterone. Of 66 patients who took one Pro-Duosterone tablet after each meal and at bedtime for three days, 30 were shown pregnant and 36 non-pregnant. The test results were correct in all cases. The majority of non-pregnant women began functional bleeding two to four days after withdrawal of Pro-Duosterone tablets, but four to six days after the last dose of hormone given by injection, he reported. Dr. Schwartz warned his audience of physicians not to expect an accurate result in women who have had histories of irregular periods or amenorrhea of three months' duration or longer. Rather, the test should be used only upon women who have previously been fairly regular in their menses. Another speaker at the same meeting, Dr. George S. Allen, of Louisville, told of his own use of the method in a series of cases. The tablets, he said, gave correct answers to the question in 90 out of 92 instances. A third speaker, Dr. Leslie V. Dill, of Georgetown University School of Medicine, Washington, D. C., said that the test is especially valuable in women over 40 years of age in whom a missed period may signal either pregnancy or the beginning of menopause.

Diagnosis of Malignancy of the Prostate With Needle Biopsy

WAYLAND K. HICKS, M.D., AND DWAYNE E. HOWARD, M.D.

SIoux CITY

THE EARLY DIAGNOSIS of prostatic malignancy is essential if the possibility of curative surgery is to be offered to the unfortunate patient. Dr. Rubin Flocks, of the College of Medicine at the State University of Iowa, has estimated that 15 per cent of men past the age of 55 years will have cancer of the prostate gland.

The increased longevity of the present day has increased this neoplastic problem. The late Dr. J. C. Kimbrough, of the Army Medical Center, Washington, D. C., noted that during the period of 1940 to 1950 in 100 patients with carcinoma of the prostate, 56 per cent were treated by radical prostatectomy and 44 per cent by palliative measures. This excellent figure of 56 per cent treated by radical surgery must be mainly attributed to the yearly physical examinations that were required of military personnel. In partial contrast, Dr. Hugh Jewett, of the Johns Hopkins Medical School, notes that in 556 of his institution's patients with malignancy of the prostate, 19 per cent were considered suitable for the radical operation. In complete contrast, Dr. Flocks wrote in 1955 that in only 5 per cent of the patients coming to the S.U.I. urological service were the neoplastic lesions confined within the capsules; that 40 to 60 per cent already had local spread; and that 40 per cent had metastases.

In a little more than four years, the authors of this paper have had 174 patients with prostatic carcinoma, and 25 (14 per cent) of them had lesions which could be considered intracapsular and not fixed to the surrounding tissue. From this group of 25 patients with intracapsular lesions, we selected 18, or 10 per cent, as candidates for radical prostatectomy. Our 14 per cent intracapsular lesions as against 5 per cent at the S.U.I. College of Medicine, in Iowa City, shows about the contrast which is to be expected between private patients and patients primarily on a charity status.

EARLY DIAGNOSIS DEPENDS MAINLY UPON THE CONSCIENTIOUSNESS OF GP'S

Dr. Hugh Jewett, during a seminar on urological malignancies, stated it as his opinion that the increased percentage of operable malignancies coming to his service could be credited to the per-

sistent propaganda relative to routine rectal examinations that has been going out to the adjacent medical territory. The urological surgeon himself is no great factor in determining the percentage of early cases that come to him or to his institution. Cancer propaganda and the conscientiousness of the general practitioner are the two big factors that can increase early diagnoses of prostatic malignancy. First, the cancer propaganda must get the male over 45 years of age to the general practitioner for a yearly checkup. Second, the general practitioner must include a rectal examination in that checkup, and he must recognize and have a study made of any areas of hardness or irregularity in the prostate gland. A yearly digital palpation of the prostate by way of the rectum is still the best means of screening men past 45 years of age for carcinoma that is early, intracapsular, without symptoms and curable.

TECHNICS OF BIOPSY

We have been using the Silverman biopsy needle to make diagnoses of suspicious prostatic lesions for over four years. Recently, the Franklin modification of the Silverman needle has been used, and it assures one of a good biopsy with each punch. The technic used has consisted of puncturing perineally, then guiding the needle along the anterior wall of the rectum with the finger in the rectum. With the nodule in the prostate resting on the finger tip, the needle is guided up to it and then the split core is pushed into the nodule. Two to four specimens are removed at the time of each biopsy (Figure 1). Recently, the transrectal approach has been used. We feel that some areas will be reached more readily by the transperineal route, and that others are more accessible by the transrectal approach.

When a biopsy is indicated, the patient comes to the hospital without breakfast. The biopsy is done, preferably, under a low spinal block anesthesia in which 50 mg. of novocaine crystals are used. Following the biopsy, a small catheter is left indwelling until evening or the following morning. The patient is home again after 12 or 24 hours.

RESULTS OF OUR STUDY

It seemed important to determine the degree of accuracy obtained by this method. We had made 105 needle biopsies on 96 patients with suspicious

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prostatic lesions. These lesions were divided roughly into two groups. The first was the intracapsular or non-fixed group. The lesions in this group varied in size from small nodules up to good-sized areas of hardness. This was the group in which we were primarily interested, for from it would come the possible cures. The second group contained those patients whose prostatic lesions were extracapsular with local spread to the adjacent tissues or with metastases. This second group called for palliative treatment only, whether neoplastic or otherwise, and it will not be discussed in this paper.

Of the 96 patients with suspicious areas (Figure 2), there were 57 who had intracapsular lesions. Of those 57, there were 22 who were found to have carcinoma of the prostate by the first needle biopsy. As proved by later studies, the 22 positive biopsies were 100 per cent correct. In the same group of 57, it is even more important that we pay some attention to the 35 patients who had negative biopsies on the first needle punch. One has since died of a cause unrelated to the urinary tract. One has moved away, and his address is unknown. Of the remaining 33, three were later found to have carcinoma of the prostate. Two of these were diagnosed by means of a second needle biopsy. The third had a second negative needle biopsy, and

then the diagnosis was made from tissue removed at the time of a transurethral prostatic resection. Fortunately, all three were still diagnosed early enough to permit radical retropubic prostatectomy, and are well and free of signs of disease at the present time. As of this writing, we know of none of the remaining 30 who have further signs of malignancy. The number of accurate diagnoses in the group of 33 negative needle biopsies was thus 30 out of 33, or an apparent percentage of 90 per cent accurate studies.

The term *apparent percentage of accuracy* is used because certain factors can still change the final figures. It is possible that follow up studies in the negative group may still reveal positive lesions. Remembering Dr. Flocks' statement that 15 per cent of men past the age of 55 years develop carcinoma of the prostate, we can expect about four patients from the negative-biopsy group to become positive sometime in the future.

In our series, lesions giving negative biopsies were unusually firm areas of hyperplasia, fibrosis in old inflammatory lesions and prostatic concretions. X-ray studies may demonstrate a calculus at approximately the site of a palpable lesion, and ordinarily the diagnosis of prostatic calculus can be properly made. However, we have had one case in which a rather large calculus was visualized

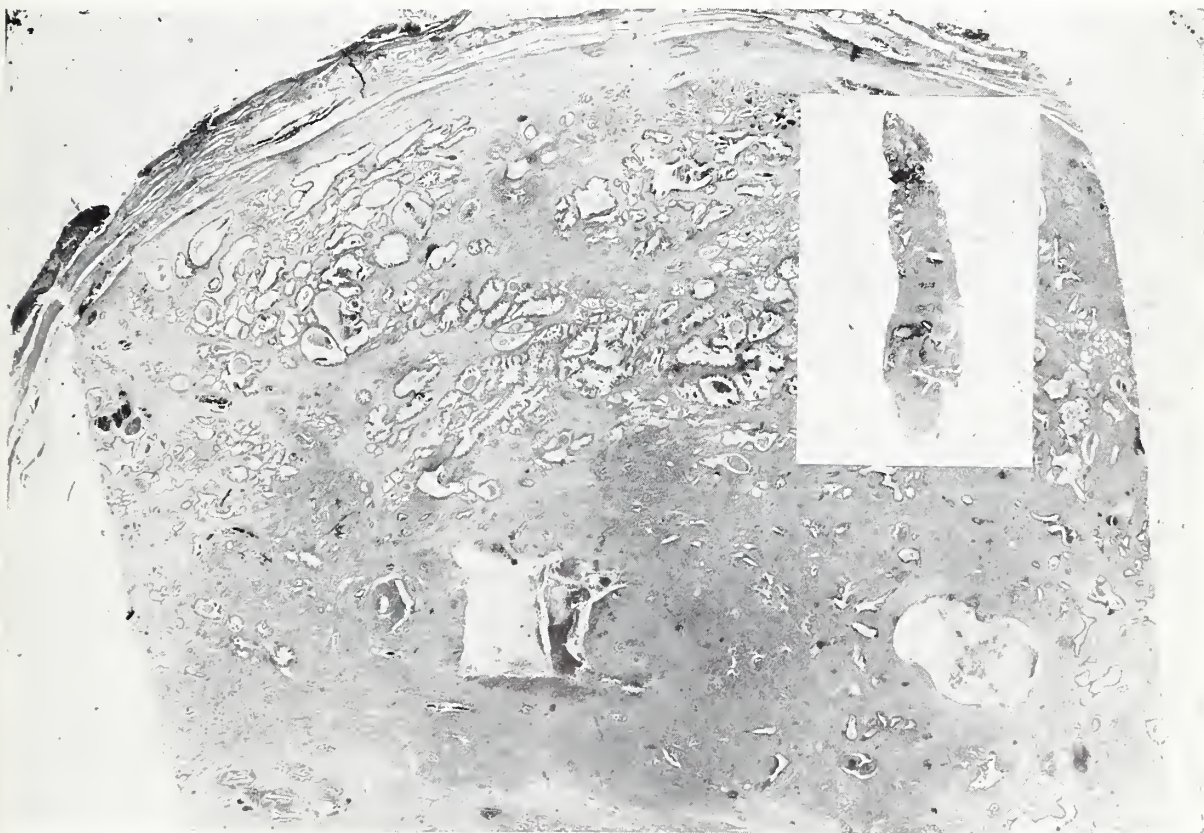


Figure 1. Prostatic surgical specimen removed by radical retropubic prostatectomy. The rectangular opening in the malignant nodule is the result of the needle biopsy. The inset is a half-length of the specimen removed.

by x-ray, yet the needle biopsy demonstrated carcinoma of the prostate. Postoperative pathologic study of the complete prostatic specimen showed an area of malignant tissue surrounding the calculus.

Early diagnosis, therefore, revealed 25 of the 57 intracapsular lesions to be positive for carcinoma of the prostate. Of those 25, there were 18 who were found suitable for radical prostatectomy. One of these 18 was killed a year later in a tractor accident, but of the remaining 17 who underwent surgery, 16 are alive and well from two to 40 months postoperatively. One is alive, but with metastases in the pelvic bones and spine. This patient's pathologic specimen at the time of the radical prostatectomy showed cancer cells in the peripheral capsular lymphatics. Another of this group of 17 had an iliac lymph node enlargement. This was removed and found to be malignant.

There are other facts relative to this study that might be worth mentioning. Of the 18 patients undergoing radical prostatectomy, 50 per cent have or had normal bladder control. Thirty-five per cent have some mild incontinence on heavy straining, and 15 per cent use a urethral clamp when doing heavy work or when they wish to be sure that no leakage takes place. All are free from incontinence at night.

It may also be of interest to note the types of treatment used in the 53 of 96 patients found to have positive biopsies (from both intracapsular and extracapsular lesions). Stilbestrol alone was used in four, and it was used in six others to supplement other types of therapy. Orchiectomy only was used in 10, and orchiectomy supplementally in six additional patients. Perineal gold alone was used in two, and perineal gold supplementally in

four others. Suprapubic gold was used in seven, and was usually followed with transurethral prostatic resection, stilbestrol and/or orchiectomy. Transurethral prostatic resection was used in 12, usually in combination with other therapy. Radical prostatectomy alone was used in 15, and three others had additional hormonal therapy.

In our study of these groups, it was noted that no patient with malignancy of the prostate presented himself with symptoms of acute lower urinary tract infection. Ten per cent had mild symptoms of urinary infection, and 90 per cent had no symptoms suggesting active urinary tract infection.

SUMMARY

Being more familiar with the suprapubic prostatic exposure than with the perineal approach, we conducted our studies with the objective of determining the accuracy of a method of prostatic biopsy other than open perineal biopsy. Open perineal biopsy approaches the seriousness of an exploratory operation, and unless one is prepared to do a radical prostatectomy when malignancy is found, one can gain nothing therapeutically by that means.

In our hands, an apparent accuracy of 90 per cent was obtained in the multiple specimens removed at the time of the first biopsy. Additional early diagnoses were made by careful follow up examinations and needle biopsies.

Yearly physical examinations of men past 45 years of age that include rectal digital examinations will disclose many suspicious prostatic lesions. Our studies indicate that needle biopsies—minor procedures—will disclose approximately 50 per cent of such suspicious lesions to be malignant.

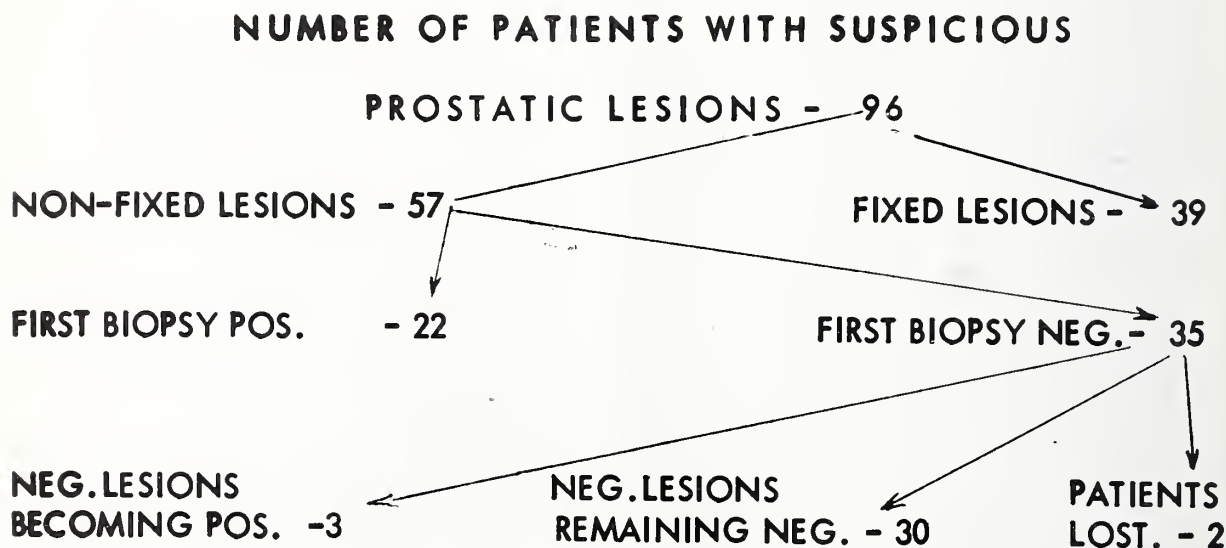


Figure 2. Chart of biopsy results.

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The Use of Antibiotics in Non-Bacterial Diseases

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CEDAR RAPIDS

THE PURPOSE of this study was to determine the extent to which antibiotics are of use in diseases that show no evidence of being bacterial in origin. It was prompted by my own confusion as to the true indications for antibiotic coverage in patients hospitalized because of respiratory diseases or influenza.

To my knowledge, many respiratory diseases are caused by a viral or non-bacterial agent. The indications, possible side effects, toxicity, development of resistant organisms and the patient's own resistance mechanisms are factors to be considered when one contemplates using antibiotics for any disease. Admittedly, these drugs are employed excessively.

A question has arisen as to whether these factors are being given adequate consideration in the hospitalized patient. On some occasions, is the physician tempted to use antibiotics by an elevation of temperature, questionable physical findings, complaints of the patient, or the expectations of the patient or his family for prompt results? When antibiotics are used early in the course of any disease or infection, the character of the illness may be so altered that a correct etiologic diagnosis and a rational form of therapy become difficult to decide upon.

SELECTION OF CASES

Approximately 150 records were reviewed. The final diagnoses were influenza, a respiratory disease and gastroenteritis, and the study covered a three-month period from October through December, 1958. The criteria used for the selection of cases to be included were as follows:

(1) *Maximum body temperature of 101° F. orally, or 102° F. rectally during hospitalization.* Although there may be a higher elevation of temperature in

viral diseases, all patients with a maximum temperature above this level during their hospitalization were excluded so that there could be little possibility that the temperature level indicated a secondary infection. Had higher levels been accepted, 50 or more additional case reports could have been included.

(2) *White blood count of 10,000 or below, with a normal differential, or lymphocytosis.* In 16 of the cases that were included, the white blood cell count was above 10,000. One patient had a count of 13,000, but the remaining 15 of them had ones of below 12,000. These 16 were included because they had definite lymphocytoses and met all other requirements. Any patient with a definite shift to the left in the differential was eliminated from the study.

(3) *No physical findings consistent with a diagnosis of bacterial disease or infection.*

(4) *X-rays consistent with the diagnosis of non-bacterial disease.* Those reports with definite radiological evidence of pneumonitis were disregarded.

RESULTS

Using the above criteria, I collected and studied the data on 79 cases of influenza or respiratory disease, and 8 cases of gastroenteritis. These data included the final diagnosis, use of antibiotics, maximum temperature during hospitalization, white blood count and differential, age, length of hospital stay, and the total cost of the antibiotics which were given.

This was not a comparative study, but was based on a modified random sampling. As a result, no definite conclusions can be drawn, but some enlightening observations can be made.

Table 1 shows the final diagnoses of the patients studied, as well as the instances in which antibiotic coverage was not received. With one exception, all of the individuals had appropriate supportive

Until June 30, 1958, Dr. Rabuck was an interne at Mercy Hospital, Cedar Rapids. Since then, he has begun service with the Armed Forces.

therapy as indicated by the patient's condition. One patient with a final diagnosis of acute bronchitis received antibiotics as the only treatment. Another patient with a final diagnosis of influenza received no antibiotics until his fifth day of hospitalization—the day of his discharge—and then was given 600,000 units of Bicillin C.R.[®].

TABLE 1

Final Diagnosis	Number of Patients	Number Not Receiving Antibiotics	Remarks
Acute Bronchitis	47	6	One received <i>only</i> antibiotics.
Bronchitis	4	0	
Viral Bronchitis	3	0	
Tracheobronchitis	3	1	
Acute Laryngotracheo-bronchitis	3	0	
URI with Bronchitis	3	1	
Acute Bronchitis with Basilar Pneumonitis	1	0	X-ray showed questionable area of pneumonitis. No repeat film.
Asthmatic Bronchitis	1	0	
Bronchopneumonia	1	0	No x-ray.
Basilar Pneumonitis	1	0	X-ray: healthy chest.
Pneumonitis	2	0	In one case x-ray showed increased vascular markings only. In the other it showed a nodule in the mid-lung field, present two months previously.
Bronchosinusitis	1	0	
Influenza	9	3	
Viral Gastroenteritis	1	1	
Gastroenteritis	7	7	
Totals	87	19	

There were several interesting observations that could be made concerning the maximum body temperatures. In 80 patients, the maximum body temperature occurred on admission or within the first 48 hours of hospitalization. There was one instance in which the maximum temperature of 101°F., rectally, on the fourth hospital day correlated with a change of antibiotics on the same day. One report revealed a maximum temperature of 100°F. on the fifth day, the day of discharge. Two patients had their maximum temperatures on their ninth hospital day (101°F. and 101.8°F., rectally), and two patients had their maximum temperatures on the tenth hospital day (98.6°F., orally, and 101.8°F., rectally).

The ages of the patients studied ranged from one month to 90 years. Fourteen of them were younger than six months, and nine were in the age group between six months and one year. These and additional age groups are shown in Table 2.

TABLE 2

Age Groups	Number of Patients
6 months or under	14
6 months to 1 year, inclusive	9
1 year to 5 years, inclusive	21
6 years to 20 years, inclusive	11
21 years to 40 years, inclusive	19
41 years to 60 years, inclusive	6
61 years to 90 years, inclusive	7
	87

The 79 cases of respiratory disease and influenza were hospitalized a total of 580 days. Excluding the 11 cases which did not receive antibiotics, the total length of hospital stay amounted to 527 days, or an average of 7.75 days per patient. The shortest hospitalization was two days, and one patient remained in the hospital for 19 days. There were 41 patients hospitalized one week or less; 24 were hospitalized between 7 and 14 days; and 5 were hospitalized over two weeks.

Of the 11 individuals who did not receive antibiotic coverage, nine were discharged in six days or less. One patient remained in the hospital for eight days, and another for nine days. The average length of hospital care for this group was 4.8 days.

The difference in lengths of hospitalization may be a reflection of the fact that only four patients in the pediatric range were not given antibiotics, whereas 39 such patients received them.

For the eight persons with gastroenteritis, the length of hospital stay ranged from one to three days, and the average was 2.1 days. In this group, there was only one patient in the pediatric age range.

Table 3 shows the diagnosis, maximum body temperature during hospitalization, white blood cell count, age and length of hospitalization for all patients who did not receive antibiotic coverage.

The cost of each antibiotic used was computed. The most favored antibiotics were, in order, Crysticillin[®], Chloromycetin[®], SRD Penicillin[®], Mystecilin V[®] and Abbocillin[®]. A breakdown showed the cost incurred by the patients in this study to have been \$639.66 for Crysticillin[®]; \$266.65 for Chloromycetin[®]; \$115.00 for SRD Penicillin[®]; \$45.90 for Mystecilin V[®]; and \$30.00 for Abbocillin[®]. Thirteen different antibiotics had been employed in these 68 patients. The five antibiotics mentioned above accounted for 95.5 per cent of the total antibiotic cost for the patients in this study. The remaining 4.5 per cent was divided among Ilotycin[®], Cosa-Tetracycline[®], Bicillin CR[®], Panalba[®], Vicillin[®], Signemycin[®], Achromycin[®] and Madribon[®].

Forty-six of the 68 patients (67.6 per cent) had

TABLE 3
PATIENTS NOT GIVEN ANTIBIOTICS

Diagnosis	Maximum Temperature	White Blood Cell Count	Age	Hospital Stay in Days
Acute Bronchitis	99.2°	9,350	39	3
Acute Bronchitis	99.0°	7,600	52	3
Acute Bronchitis	97.6°	11,950 (60% L)	2	4
Acute Bronchitis	102.2°	7,100	2	5
Acute Bronchitis	100.4°	11,900 (57% L)	53	3
Acute Bronchitis	100.6°	7,000	1	6
URI with Bronchitis	99.0°	9,700	72	3
Tracheobronchitis	99.2°	11,850 (70% L)	11 mos.	9
Influenza	98.6°	4,850	20	4
Influenza	103.4°	10,800 (68% L)	2	8
Influenza	99.2°	9,700	21	5
Gastroenteritis	99.2°	4,500	3	2
Gastroenteritis	102.0°	8,700	33	2
Gastroenteritis	99.0°	9,750	25	1
Gastroenteritis	98.6°	7,000	58	2
Gastroenteritis	98.6°	7,700	32	3
Gastroenteritis	99.4°	10,250	26	3
Gastroenteritis	99.6°	25,400	72	3
Gastroenteritis	97.8°	6,250	68	2

been given a combination of antibiotics. Thirty-four of the 63 patients (exactly 50 per cent) had received Crysticillin® and Chloromycetin® in combination. That combination accounted for 73.9 per cent of all combinations prescribed. The remaining combinations consisted of SRD Penicillin® and Chloromycetin® in four patients; Crysticillin® and Mystecilin V® in three instances; and SRD Penicillin® and Tetracyc-V® in two patients. Combinations of Crysticillin® and Ilotycin®, of Abbecillin® and Madribon®, and of Cosa-Tetracyc® and Vicillin® had been employed for one patient each.

The total cost to patients for antibiotics was \$1,152.48. If this had been divided equally among the patients receiving antibiotics, each patient would have had a charge of \$16.95 for antibiotics during the entire hospitalization, and since the "antibiotic patients studied" averaged 7.75 hospital days, there was an added cost of \$2.19 per patient hospital day for the use of antibiotics in a non-bacterial disease.

REVIEW OF THE LITERATURE

As a part of this study, I reviewed the literature, taking particular note of the prophylactic use of antibiotics, the routine use of antibiotics following surgery or delivery, and the place of antibiotics in the treatment of respiratory and virus diseases.

The prophylactic use of antibiotics is an important adjunct to overall medical health. Reports from autopsies of postoperative deaths¹ reveal that one death in three resulted from an infection prior to the sulfa or antibiotic era, one death in four during the sulfa period, and one death in

seven after the introduction of antibiotics. Foster *et al.*¹ believe this decline in deaths due to infection is more than could have been accounted for by surgical refinements or new technics. Their study covered the period from 1924 to 1957. They also noted that two-thirds of the deaths due to infection were, in the order of frequency, operations on the colon, stomach, gallbladder, bile ducts and brain. They concluded that those areas seem anatomically susceptible, and that additional caution is therefore indicated in surgery of those areas.

Knapp⁷ gives rather concise criteria for the use of prophylactic antibiotic coverage:

- 1. The infection to be prevented must be a predictable one initiated by a specific organism.
- 2. The organism must be consistently sensitive to the drug used and show little or no tendency to produce resistant strains.
- 3. The individual to whom prophylaxis is applied must be expected to be exposed and susceptible to the particular infectious agent.
- 4. The drug used must be practicable from the standpoint of cost, effectiveness, side effects and toxicity.

If we accept these criteria for the use of prophylactic antibiotic coverage, we must evaluate each individual patient. Several papers have contained lists of situations for which the authors recommend the use of prophylactic antibiotic coverage.^{2, 3, 7, 11, 14} These vary to a minor degree, but the combined recommendations are as follows:

- 1. Control and/or prevent infections by hemolytic streptococcus and its complications.
 - a. Rheumatic fever—initially and to prevent recurring attacks
 - b. Valvular heart disease
 - c. Congenital heart disease
 - d. Surgery on the heart or valves
- 2. Gonococcal infections
 - a. Newborn—eyes
 - b. Adult contacts
- 3. Syphilis in adult contacts
- 4. Meningococcal infections in epidemic contacts
- 5. Bacillary dysentery in epidemic contacts
- 6. Surgery through infected or contaminated accidental wounds or burns
- 7. Surgery in any infected field or near established infections
- 8. Preparation for gastrointestinal surgery
- 9. Presence of indwelling catheters or surgery on a deranged urinary tract
- 10. Surgery on injuries to oral and related cavities
- 11. Surgery in elderly people with chronic lung disease or abscess.

Knapp⁷ reported 200 cases in which he compared the postoperative infection rate both locally and in other areas following "clean surgery." The surgical procedures were appendectomy, cholecys-

For the prevention of spontaneous or postoperative bacterial endocarditis

tectomy, subtotal gastrectomy, herniorrhaphy and hysterectomy. He found that local infections were 3.9 per cent without the routine use of antibiotics, as compared to 15.6 per cent in patients on routine antibiotics. Infections or complications other than local were shown to be 21.9 per cent in patients on routine antibiotic coverage. The infection or complication percentage was 3.9 when antibiotics were not used, or used only on specific indications. For the entire study, the complications in the group of 154 patients on whom routine antibiotics were not used totaled 7.8 per cent. In the 46 patients on whom prophylactic antibiotics had been used routinely, the complications totaled 37.5 per cent.

Petersdorf¹⁰ found the routine prophylactic use of antibiotics unreliable in the prevention of pneumonia in unconscious patients. Webster¹⁵ reports that in one sampling, 70 per cent of antibiotic prescriptions were for prophylactic therapy. Unless the prophylactic use meets the criteria or other situations listed above, the routine use of such prophylaxis seems to predispose to complications. If an infection does develop during therapy with prophylactic antibiotics, the problem is further complicated by an organism which is now resistant to the prophylactic agent.

Pulaski¹² believes the routine postoperative use of antibiotics reflects the surgeon's lack of confidence in his aseptic techniques, his lack of understanding of the limitations of antibiotics, and his ignorance of the potentially harmful effects of their use. Howe⁵ maintains that it takes more fortitude not to use antibiotics than to succumb to the pressure of the patient's family and friends, and of one's own colleagues. Altemeier *et al.*¹ point out that prophylactic antibiotic coverage gives the physician a false sense of security in that he thinks he has done all that is possible as a physician to avoid infection. There may be alterations in the signs of resulting infection or in the course of the infection that subsequently prevent him from diagnosing the infection or realizing its extent. This may be lethal.

The primary causes of post-surgical infection, according to Altemeier and his co-workers¹ are: inadequate removal of devitalized tissue post-operatively from ill-fitting dressings or casts, strangulation of large bits of tissue, and impairment of circulation secondary to delayed thrombosis or too tight a wound closure.

Howe⁶ emphasizes that antibiotics are ineffective in the presence of necrotic tissue. It is the belief of most physicians that antibiotics have a definite place in the treatment of the infected patient. At best, antibiotics are good adjuncts to be used only with discretion.

There are reports from many areas of the world concerning the overuse of antibiotics. Webster¹⁵ reports that 92.1 per cent of the occupants of a small township in America received antibiotics in

a five-year period. Loh and Street⁹ showed that 63 per cent of the patients on medical, surgical and pediatric wards of one hospital had antibiotic treatment in one month. The cost of antibiotics in the Cincinnati General Hospital was \$24,467.64 in 1950, and this total rose to \$35,764.27 in the first 10 months of 1954.² The National Health Service in England is said to have used 6,000 Kg. of Chloromycetin[®] annually.¹⁵ That amount is enough for average courses of therapy for 1,000,000 adults. In a hospital in northeast Scotland, 30 per cent of the medical and surgical patients received antibiotics.¹⁵

Howe⁵ reviewed the common disease syndromes involving the respiratory tract. He discussed the clinical features, symptoms, diagnostic procedures and indications for antibiotics. His discussion included the common cold, exudative tonsillitis or pharyngitis, pharyngoconjunctival fever, acute respiratory disease, atypical pneumonias, lobar pneumonia and influenza. He said he feels that exudative tonsillitis, Rickettsia burneti, lymphogranuloma venereum, psittacosis, ornithosis and lobar pneumonia are the respiratory diseases for which antibiotics are indicated. Such therapy is open to question in primary atypical pneumonia. Antibiotics have no effect on viral diseases, except in the large viral group (psittacosis or ornithosis). Close examination of the clinical features and a correct diagnosis are conducive to a resulting decrease in the indiscriminate use of antibiotic therapy.

There are recognized risks in antibiotic therapy. It has been estimated that in approximately 50 per cent of antibiotic fatalities, the agents have been prescribed unnecessarily. Webster¹⁵ discussed the dangers in the use of antibiotics, and the following outline summarizes them.

I. Toxicity

- A. Anaphylactoid reaction, most common with penicillin and particularly with depo penicillin. There is one death per million injections.
- B. Skin reactions—mild to exfoliative dermatitis—may occur with any particular antibiotic but especially with penicillin and streptomycin. Fifteen per cent of patients treated for more than one week with Novobiocin[®] are affected.
- C. Nephrotoxicity—albuminuria and nitrogen retention—most common from neomycin and bacitracin used systematically.
- D. Neurotoxicity—eighth-nerve involvement due to streptomycin and derivatives.
- E. Aplastic anemias. (Six to 10 grams of Chloromycetin[®] can be used safely.)

II. Indirect Effects

- A. Superimposed infection—monilial overgrowth or changes in bacterial flora, particularly with the use of the tetracyclines.

- B. Suppression of physical signs of extensive infections.
- C. Modifying the course of infection or masking the infection.

The use of antibiotics in combinations has increased steadily. Webster¹⁵ discusses the types and combinations of antibiotics. He emphasizes that the bactericidal antibiotics are penicillin, streptomycin, bacitracin and neomycin. The drugs in this group combine well and act in a synergistic manner against the infecting agent. The bacteriostatic antibiotics consist of the tetracyclines, chloramphenicol and Novobiocin®. Combinations of bacteriostatic and bactericidal antibiotics are unpredictable in their actions and the agents may even be antagonistic to one another. Combinations of bacteriostatic drugs are compatible, but they are unnecessary since all are broad-spectrum antibiotics. Lepper⁸ demonstrated that the use of penicillin in pneumococcal meningitis had a resultant overall mortality rate of 30 per cent, whereas the use of a combination of penicillin and Aureomycin® in a much smaller series, showed an overall mortality rate of 79 per cent.

CONCLUSION

Seventy-nine case records of influenza and respiratory diseases as well as eight case reports of gastroenteritis were reviewed. There is little or no evidence that these illnesses were bacterial in origin. None of the eight patients with gastroenteritis were given antibiotics. Sixty-eight patients (83.8 per cent) with respiratory disease or influenza were given antibiotic coverage. Review of their records revealed that the average length of hospitalization was 7.75 days. A total cost of \$1,152.48 for antibiotics was incurred by these patients. There was thus a \$2.19 increase in the hospital's charge per patient day for these individuals.

The 11 patients who did not receive antibiotic coverage were hospitalized an average of 4.8 days.

The literature has been reviewed with particular attention to the prophylactic use of antibiotics, the routine use of these drugs following surgery or delivery, and the place of antibiotics in respiratory and viral diseases.

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1959-1960 Medical Postgraduate Conferences at S.U.I.

Sept. 10-11
Sept. 16-17
Sept. 25-26
Oct. 17-18
Oct. 30-31
Nov. 19, 20, 21
Dec. 8-9
Jan. 20
Feb. 16, 17, 18, 19

Diseases Common to Animals and Man
Pediatrics
Urology
Iowa-Nebraska Neuropsychiatric Conference
Radiology
Midwest Cardiac Conference
Surgery
Obstetrics & Gynecology
Refresher Course for the General Physician

The SUI football team will play Kansas State on October 31, and Notre Dame on November 21, in Iowa City. Doctors who plan to be in town on those dates and wish football tickets should secure them immediately.

Information regarding speakers, registration fees, etc. will be available six weeks prior to the respective conferences. Address letters to John Armes Gius, M.D., director of postgraduate medical studies, SUI College of Medicine, Iowa City.

Clinical Pathologic Conference

SUMMARY OF CLINICAL FINDINGS

IN FEBRUARY, 1958, a 59-year-old white woman was admitted to the University Hospitals in a semi-comatose state, with a history of cough and pain in the left chest of one week's duration. At the onset of the cough, her family physician had made a diagnosis of pneumonia, and had prescribed Chloromycetin. After eating breakfast on the day of her admission, the patient had lost consciousness and had collapsed to the floor.

Past History: In 1933, the patient had been admitted to this hospital with chronic pelvic inflammatory disease. A bilateral salpingo-oophorectomy and hysterectomy had been done when the condition had failed to respond to medical management. In 1934, the diagnoses of psychoneurosis, neurasthenia and hysteria had been made. Her symptoms had been low back pain and sacral pain. The Wassermann reaction had been negative, but the Kahn had been 3+.

From 1940-1957, the patient had been followed on an out-patient basis because of hypertension with blood-pressure values ranging from 160/96 to 212/125. A Kolmer reaction had been 1:8 on one occasion. In 1950, a chest x-ray had shown widening of the ascending aorta.

In 1957, she had been hospitalized with angina pectoris. The Kolmer titre had still been 1:8. An EKG had been similar to that taken in 1944. After a week, she had been discharged and advised to take nitroglycerin and rest when her chest pain recurred.

Physical Examination: The patient regained consciousness on admission, and was alert enough to follow simple commands. The blood pressure was 100/70 mm. Hg., the pulse was 112, and the respirations were 26. The body temperature was normal. The skin was cold and clammy. There were percussion dullness and decreased breath sounds over the left lower hemithorax. The heart was enlarged to the left anterior axillary line. Rhythm was regular. Heart sounds were of good quality. A loud systolic murmur radiating toward the neck was heard over the aortic area. Deep reflexes and cranial nerves were normal.

Laboratory: Urinalysis showed 1+ albumin and numerous white blood cells. The hemoglobin was 11.3 Gm./100 cc. The white blood cell count was 20,750/cu. mm., with 81 per cent polymorphonuclear cells on the differential. The electrocardiogram showed left ventricular hypertrophy and evidence of an old anterior myocardial infarction.

Course: The patient was given morphine and

luminal for pain and restlessness, and O₂ per nasal catheter for shortness of breath.

In the next two days, she became more alert, and the blood pressure rose to 140/98 mm. Hg. The oxygen was discontinued.

On the fourth hospital day, the patient unexpectedly died at 2:00 a.m., while asleep.

SUMMARY OF CLINICAL DISCUSSION

Dr. John Hunt, Internal Medicine, Iowa City VA Hospital: The clinical picture as presented in this protocol is strongly suggestive of a dissecting aneurysm of the aorta, with the evidence resting more on a combination of compatible clinical features than on any strong, single diagnostic feature. I shall have to admit that seeing the x-ray film has somewhat modified my evaluation of this information. Let us consider the information we have to work with first, and take stock of the x-ray later.

The problem, in brief, is that of a middle-aged woman who had had chronic and severe hypertension, and who later had an acute illness of about 10 days' duration which was characterized by chest pain, signs of fluid in the left chest, possible syncope and shock, and who then died a sudden death. In my original evaluation, I had thought that the problem of the diagnosis of aortic dissection was not the major one, and that the chief point of argument concerned whether or not she also had syphilitic aortitis, and if so, what role it played in her illness.

When we consider the clinical evidence that has been given us, the past history is of great value, particularly since records were maintained of the patient's visits to this hospital throughout the past 26 years. She was known to have chronic and severe hypertension, as I have mentioned, more recently to have had angina pectoris, and on her final admission to have shown evidence of an old myocardial infarction. Secondly, she had positive serologic tests for syphilis which were observed here one year after pelvic inflammatory disease, and therefore, I presume that she had syphilis. Apparently she was never treated for syphilis, and therefore we have to give strong consideration to the possibility of active late syphilis and, in the light of this protocol, to syphilis of the aorta. Of course, we know these days that biologically false-positive serologic tests for syphilis can be chronic and can last for many years, rather than be transient as we originally thought. One might attempt to explain away the serologic tests on that basis, but I can see no reason for trying

to do so, particularly since the serologic evidence followed pelvic inflammatory disease, and since, I would imagine, even in Iowa the leading cause of positive serologic tests for syphilis is syphilis itself.

It is of particular interest that in 1950 the patient was found to have widening of the first portion of the aorta, and that finding in combination with the serologic evidence for syphilis would, in my opinion, constitute the strongest sort of presumptive evidence for syphilitic aortitis. But to confuse us when we consider the possibility of aortic dissection here, we have two considerations. One is that syphilitic aortitis is rarely the cause of a dissecting aneurysm of the aorta, and is even said to protect against it by the scarring that it produces in the aortic media. Second, a dissecting aneurysm can, on occasion, mimic syphilitic aortitis by producing dilatation of the aorta confined to the first part of the aorta. Thus, before we proceed much further, I think it might be wise for us to stop and see the x-rays.

Dr. Carl L. Gillies, Radiology: The aorta is diffusely dilated throughout the thoracic portion. The patient was given a swallow of barium, and you can see the aorta displacing the esophagus. The aorta contained calcium in the ascending portion—one of the characteristics of syphilitic aortitis. From the radiographic standpoint, I think the appearance is characteristic of syphilitic aortitis, rather than of dissecting aneurysm.

Dr. Hunt: Do you see any evidence of actual sacculation?

Dr. Gillies: No, this is fusiform dilatation. It is not a saccular aneurysm.

Dr. Hunt: Well, that reassures me a bit. In my earlier hasty glance at the film, I thought it might show a saccular aneurysm. I would agree that the only reasonable explanation of this aortic dilatation is syphilitic aortitis. In addition to this typical x-ray appearance of syphilitic aortitis, we know that the lesion had been present for seven years, and it would be highly unlikely that the patient had had an aortic dissection seven years ago producing this dilatation that permitted her to survive this long before having another dissection of the aorta.

Her present illness began with pain in the chest, and the protocol gives us very little information about the pain. I gather from the record that it was not the excruciating pain that one might expect to find in aortic dissection, but apparently an intense one requiring opiates for relief and lasting at least a week. The pain, of course, might not have been produced by aortic dissection or any other disease process in the aorta. It might have been the pain of pleurisy, for example. After her admission to the hospital, she had a transient and sudden loss of consciousness. Hamburger and Ferris have pointed out that in dissecting aneurysm of the aorta, syncope is a fairly frequent occurrence, whereas it is rare in myocardial in-

farction.¹ Their explanation, as I recall, was that the dissection involved the vasodepressor nerves in the aortic wall. There may, of course, be other factors such as blood loss and constriction of the mouths of the coronary arteries.

On physical examination, she was in shock and remained in shock a full week after the onset of this illness. I think that is very significant. She had physical signs in the left chest which I interpret as those of a pleural effusion, and they may be fitted in very well with aortic dissection. In other words, she had probably already had a leak into the left pleural cavity, as is commonly true of these patients. There are other diagnostic possibilities which might be brought up in an attempt to explain this picture, but they do not seem to me to provide a good explanation of the rather large left pleural effusion. One might try to explain it on the basis of a failing heart or of pulmonary infarction, but these possibilities seem to me to be unlikely. Her heart was enlarged, as one might expect in a chronic hypertensive, and she had a loud systolic murmur. Now if this were a brand new murmur, developing with the acute illness, it would be excellent evidence—and another piece of evidence—to go with dissecting aneurysm. I am afraid we don't know how long the murmur had been present, however.

Along the line of laboratory study, the patient was found to have a marked leukocytosis—I presume in the absence of any fever. This too, could be fitted into the diagnosis that I mentioned, since it might be regarded as a reaction to bleeding or to injury of vessel walls. Finally, the electrocardiogram that was reported, I think, would be quite compatible with the diagnosis. Some abnormality in the electrocardiogram is the rule, rather than the exception, in dissecting aneurysm of the aorta. The changes seen are usually those of left ventricular hypertrophy, but there may be cardiac arrhythmias; evidence of old infarction of the myocardium or even recent infarction resulting from the dissection itself; or the changes of pericarditis.

As to the patient's hospital course, it was brief and can be covered briefly. As I have mentioned, she had persistent pain and shock for at least a week after the onset of her acute illness, and that, in my opinion, would be extremely unlikely to occur in myocardial infarction. Then, she died suddenly after she seemed, perhaps, to be a little better. If she actually did have a dissection of the aorta, it seems almost certain that she had a terminal rupture of the aorta, presumably into the left pleural cavity.

I have committed myself rather thoroughly, even from the start, and if one considers things in differential diagnosis, it seems to me that there aren't many things to take up. One of them would be myocardial infarction, and it doesn't fit at all well

¹Hamburger, M., Jr., and Ferris, E. B., Jr.: Dissecting aneurysm; study of 6 recent cases. *AM. HEART J.*, 16:1-13, (July) 1938.

with the clinical picture which has been described. One could marshal some points against that diagnosis, for example, the prolonged pain, prolonged shock, large left pleural effusion and absence of electrocardiographic evidence of infarction of the myocardium. We should have to wonder, on the basis of the evidence in the protocol, whether she might have developed a saccular aneurysm, but the x-ray doesn't show one. Incidentally and somewhat surprisingly, the x-ray also shows no definite pleural effusion. I think she did have syphilitic aortitis, and therefore, if I postulate aortic dissection, I must take that into account. Statistically, it would be rather unlikely that syphilitic aortitis was the actual basis for the aortic dissection, although it is quite possible. I think I'll stay with the statistics and say that the two were only associated. Therefore, in conclusion, I should say that this woman had a dissecting aneurysm of the first portion of the aorta, with terminal rupture probably into the left pleural cavity, and that in addition, she had active syphilitic aortitis.

Dr. Jack M. Layton, Pathology: At autopsy, the most striking lesions were confined to the cardiovascular system.

The heart was hypertrophied. The tricuspid, pulmonic and mitral valves were relatively normal, but the aortic valve leaflets displayed fibrous, cord-like thickening of the free margins. The commissures were widened only slightly. The entire aorta and right iliac artery were dilated, tortuous and inelastic. The intima of the ascending aorta was wrinkled, and advanced atherosclerotic lesions involved the entire aorta and right iliac artery. The media was thin, with necrosis and scarring, and the adventitial vessels were involved by chronic vasculitis. A large saccular aneurysm was present in the arch of the aorta, and the aneurysm had dissected along the entire aorta and right iliac artery, distally. The thoracic saccular aneurysm had ruptured into the left pleural cavity. The left lung was collapsed, and mediastinal structures were displaced by 1,900 cc. of blood clot and fluid in the left pleural cavity.

Vertebral and basilar arteries, as well as the vessels comprising the circle of Willis, were involved by severe atherosclerosis.

A well-healed scar represented the residuum of the surgical procedure of panhysterectomy and appendectomy.

NECROPSY DIAGNOSES

1. Syphilitic aortitis, with aneurysm formation and subsequent dissection and rupture into the left hemithorax
2. Hemothorax, left (1,900 cc.)
3. Massive collapse of left lung
4. Cardiac hypertrophy
5. Chronic passive congestion of liver and kidneys
6. Retention cysts, multiple, kidneys.

Syphilitic aneurysm doesn't form when only the media is destroyed, or when only the elastica is destroyed, or when the elastica and the media are destroyed. I want to stress that in the formation of syphilitic aneurysm all of the tissues of the wall are involved in the process. Syphilitic aneurysm may form when the rate of active inflammatory destruction of all of the different tissues that form the aortic wall exceeds the rate of repair by fibrous tissue proliferation.

It has long been known that syphilis potentiates the development of atherosclerosis. People who have syphilis involving the aorta may have severe atherosclerosis of the aorta, and the loci of severity tend to accompany the loci of syphilitic involvement.

Dr. Paul M. Seebohm, Internal Medicine: Dr. Gillies, what was the date on the chest x-ray film?

Dr. Gillies: January 8, 1957, or one year prior to the final admission. No films were taken of the patient during her terminal illness.

Dr. Layton: Yes, there must have been some dissection or separation there for quite a while.

Dr. Emory D. Warner, Pathology: It was apparently entirely asymptomatic, for she had dissection of her whole abdominal aorta with no pain.

Dr. Walter M. Kirkendall, Internal Medicine: I should like to ask Dr. Layton whether syphilis accelerates arteriosclerosis other than in the local lesion.

Dr. Layton: The acceleration of the atherosclerotic process is in the areas of syphilitic infection.

Dr. Kirkendall: There are a great many other vessels in the body which presumably have not been damaged by the syphilitic process. Are these free from arteriosclerosis, relatively speaking, or is the process accelerated there as well?

Dr. Layton: In the areas where syphilis has not involved the vessels, those vessels don't show more severe atherosclerosis.

Dr. Hunt: I should like to ask, just for interest's sake, why this patient wasn't treated for syphilis.

Dr. Seebohm: I can't answer that. There was an abortive effort to treat her with three injections of neo-arsphenamine and seven of bismuth in 1934, when her Kahn test was positive. It isn't clear just why she wasn't treated after that, except that she was an incorrigible type of patient. When her physicians tried to investigate her disease further, she would disappear, only to return when in trouble. As a result, we have this record of an untreated case of syphilis.

Dr. George N. Bedell, Internal Medicine: Can anyone explain the systolic murmur?

Dr. Hunt: I should think that the aortic dilatation might account for the murmur.

I don't know just how far down the ascending aorta the dissection extended. Did it involve or obstruct the valve?

Dr. Layton: No.

Dr. Bedell: Would you explain it by the fact that there was a physiologic stenosis? Even though the valve was normal, the aorta was dilated and the physiologic stenosis probably gave the systolic murmur. I don't think you can explain left ventricular hypertrophy on the basis of aortic valve disease. The aortic valve looked pretty normal.

Dr. Layton: You'd better throw that slide up again for Dr. Bedell to look at.

Dr. Bedell: What do you think the lesion of the valve is?

Dr. Layton: It is syphilitic valvulitis.

Dr. Bedell: Is it narrowed?

Dr. Layton: No.

Dr. Bedell: Is there insufficiency?

Dr. Layton: There probably was some. You see this other false passage right in the arch. I don't know what effect that might have had on the circulation.

Dr. Bedell: Then the left ventricular hypertrophy was not on the basis of aortic valve disease. It was probably on the basis of hypertension which the patient had had for some time. From the looks of the valve, she didn't have serious aortic insufficiency—neither blood-pressure changes nor the characteristic heart murmur. I didn't mean that her valve was normal pathologically. But apparently nobody picked up physical findings of aortic valve disease.

Student: Was her blood pressure the same in both arms?

Dr. Seebohm: There is no statement about which arm the blood pressure was taken in, and there is only one blood pressure recorded at a time, so I can't tell you whether the blood pressures were equal bilaterally. The peripheral pulses were strong bilaterally on admission in January, 1957. However, on the admission immediately prior to the patient's death, nothing was recorded about the pulses.

Dr. Carney, would you go over the serological reports pertaining to this patient and give us some general information on how to make a diagnosis on the basis of serological values alone, as the clinician who saw this patient early in the course of her illness had to do? What would be the recommended present-day treatment if one were to make this diagnosis now?

Dr. Robert G. Carney, Dermatology: I should like to echo Dr. Layton's remark, "It's a grand old disease, and I hate to see it depart."

I think there is some question as to when this lady acquired syphilis in the first place. According to the record, she had a miscarriage in 1918, and that fact might suggest an earlier origin of the disease. Her serology in 1933-1934 was extremely weak, for the Wassermann was negative, and the Kahn test was 2+ or 3+ most of the time. That situation persisted into the 1950's, when she first began to show stronger positive tests.

Ordinarily in early syphilis, the serologic tests

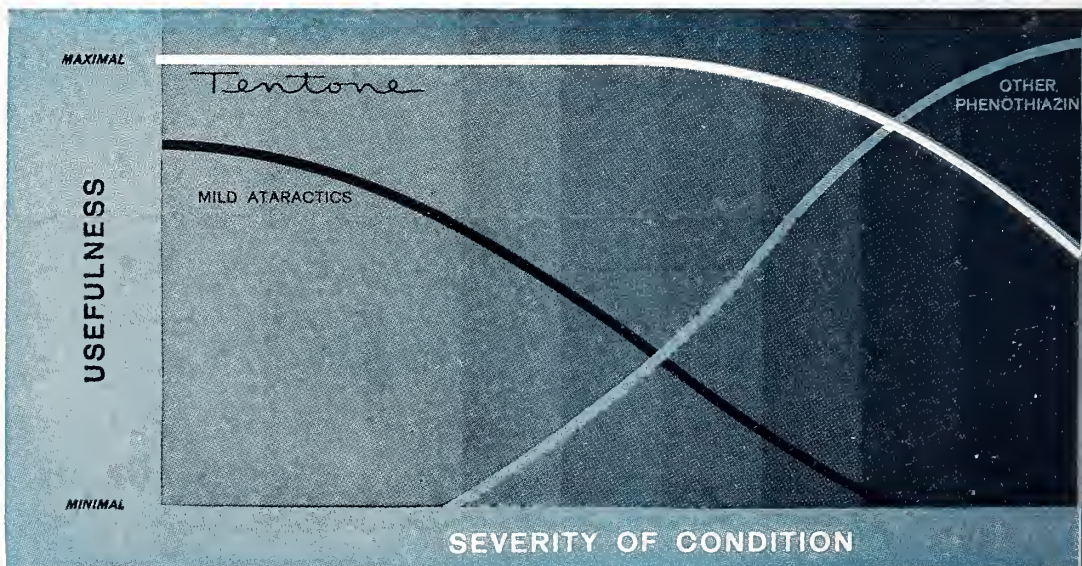
should be fairly strongly positive, and they may remain either strongly positive in untreated syphilis or may fall off gradually to a very low titre. The increase in the titre in the Kolmer test, as in 1950 and 1957 when it was positive 1:8, may not mean anything because the Kolmer test has been extremely sensitive in the past few years. In the past, we considered the Kolmer the more diagnostic of the two tests. The Kahn was the one that pointed the finger at a great many people, and then the Kolmer helped to differentiate which ones really had the disease. Then the antigen was so sensitized that now we have come to depend more on the V.D.R.L. tests.

I think it just may be interesting to review the mechanisms of these serologic tests for syphilis. In the precipitation or agglutination type test the antigen, which is a modified cow's heart material, is mixed with the serum from the patient. If the patient has syphilis, there is a reagin or antibody present that has the property of precipitating or agglutinating this finely-divided mammalian tissue lipid material which is used for the antigen, and that agglutination or precipitation indicates a positive test. In the Kolmer or Wassermann type, which is a complement fixation test, this antigen is mixed with the syphilitic serum, and incidentally this is an inactivated serum, the normal complement of the patient's blood being destroyed. A specific amount of complement is added in the form of guinea pig serum. If the serum is syphilitic, that complement is used up, and with the subsequent addition of sheep red cells and sensitized rabbit serum, there will be no reaction there. On the other hand, if the patient is not luetic, the complement is not used, and there will be a reaction of hemolysis. The main reason I show you this is that the cow is not syphilitic, and neither is the guinea pig, the rabbit or the sheep. This test isn't a specific test for syphilis, but it is an amazingly accurate one when one considers that it has no relation to the disease. As you would expect in such a test, there are false reactions on occasion.

Dr. Seebohm raised a question regarding our means for differentiating a false-positive reaction from a true syphilitic reaction. In the good old days, there were very few biologic false reactions, but now the tests are extremely sensitive. It was possible in the old days, I'm sure, to have active late syphilis with a completely negative serology—a thing that we feel now couldn't happen with the present-day very sensitive tests. Actually, these tests have two characteristics, one being the sensitivity in the sense of picking up every patient with syphilis, and the other being specificity, picking up only the luetic patient. Theoretically, perhaps, it is possible for one of these tests to be completely specific and completely sensitive, but at the present time the tendency has been to lean toward sensitivity. Thus, we feel that we don't miss any

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active luetics nowadays, but we do pick up an increasing number of innocent individuals.

Because of this, I might mention, some of us feel that the legally-required premarital testing should be discontinued. Practically speaking, we feel that we are causing more grief and worry to people than we are doing good by picking up unsuspected syphilis. Of course, at present, if after a complete and thorough workup and repeated serologic tests there still is a question about whether a patient is luetic or not, we can go to the *Treponema pallidum* immobilization, *Treponema pallidum* complement fixation, Reiter protein complement fixation, or some of the others of these specific spirochetal tests. Dr. Borts isn't here, and I may perhaps be giving you some misinformation, but to my knowledge the T.P.I. is still the most accurate, the T.P.C.F. next most accurate, and the R.P.C.F. least accurate. These tests are of value only in differentiating late syphilis patients from false reactors. These tests are probably negative in 50 per cent of primary syphilis cases and are negative in perhaps 25 per cent of secondary luetics, but in luetics who have had the disease at least two years, they are nearly 100 per cent accurate in differentiating syphilis from biologic false reactions. The T.P.I., particularly, is an extremely expensive test, and though the government picks up the bill, you-know-who pays for it after that. The test is restricted to problem patients who have been given complete workups, including spinals.

I should state, lest you think we elected not to treat this patient, that we never saw her. Particularly with the older methods, it is true that we often had a great deal of difficulty in getting patients to continue under treatment. The arsphenamine and bismuth treatment took anywhere from 1½ to 3 years of injections at weekly intervals. Quite commonly, when the patient had taken two, three or four treatments, and either the primary lesion healed up or the secondary eruption went away, he would stop treatment either because he didn't want to take it any more or, in some cases, because a physician mistakenly said, "You're healed and don't need any more care."

There is perhaps somewhat questionable evidence that poor treatment is worse than none at all. At least 60 or 70 per cent of untreated luetics never get into trouble, and some evidence tends to show that at least 50 to 60 per cent of them get into trouble if they are only partially treated.

The treatment since penicillin became available has been so much improved that there is no question about which drug to use, but there is still some question about the schedules. We are still using a daily injection of procaine penicillin G here, simply because we see so little syphilis and there is so little syphilis anywhere in the country

that the testing of new schedules is extremely slow.

There is no test for a cure of syphilis. Even the T.P.I. remains positive throughout life or for many years, as do the serologic tests in old syphilis. So there is no test of a cure except to go out and get it again, and that is not an advisable procedure. It follows that the only trial of a new schedule of treatment requires the treatment of hundreds and hundreds of patients with each new schedule, and following those patients statistically as a group over a period of many years.

I think there is sufficient evidence now that in early syphilis—with which we may or may not have been dealing at the time this patient was first seen—one single injection of 2,400,000 units of Benzathine penicillin G is sufficient. Whether this is sufficient in late syphilis or not, I don't know.

Regarding the treatment of this patient at the time she was seen early in 1957, I doubt very much that therapy would have made a great deal of difference in her course. Our feeling in general about cardiovascular syphilis is that by the time you can make an accurate clinical diagnosis, it's probably too late to bring about a complete cure, in that the mechanical damage has been started and will be progressive even if the basic disease is arrested.

The question of a Herxheimer reaction comes up, and I think this is one of the worst places to be second-guessed. In general, with the older methods of treatment—arsphenamine for instance—the Herxheimer reactions occurred mainly in late syphilis. With penicillin, we see our Herxheimer reactions in early syphilis. A person with a chancre develops secondary syphilis, an evanescent secondary eruption after the first injection. The Herxheimer reactions in late syphilis treated with penicillin have been extremely uncommon, but they do occur, and I would prefer, if called upon to treat a patient with demonstrable aortic late syphilis, to prepare the patient with bismuth for several weeks, just so that no one could say, "Well, you should have done it."

ADVANCED ELECTROCARDIOGRAPHY IN OMAHA

The University of Nebraska College of Medicine will offer the first of a ten-course series of post-graduate programs on September 28-30. Dr. Enrique Cabrera, of the Institute of Cardiology in Mexico City, will team with Dr. Eugene Lepeschkin, of the University of Vermont, in presenting a three-day course in Advanced Electrocardiography. The course fee will be \$50. Applications should be addressed to the Office of Medical Education, University of Nebraska College of Medicine, 42nd and Dewey, Omaha 5.

Coming Meetings

In State

- Sept. 10-11 **Diseases Common to Animals and Man.** SUI College of Medicine, Iowa City
- Sept. 16-17 **Pediatrics.** SUI College of Medicine, Iowa City
- Sept. 23 **Mercy Hospital Dedication Program** (see P. 407 in July Journal). Mercy Hospital and Hotel Savery, Des Moines
- Sept. 25 **Iowa Conference on Children & Youth.** State House, Des Moines
- Sept. 25-26 **Urology.** SUI College of Medicine, Iowa City
- Sept. 27-29 **Iowa Academy of General Practice.** Savery Hotel, Des Moines

Out of State

- Aug. 3-5 **Society for Clinical & Experimental Hypnosis.** Fairmont Hotel, San Francisco
- Aug. 3-14 **Annual Postgraduate Course, U. S. Section, International College of Surgeons and Cook County Graduate School of Medicine General Surgery Course.** Cook County Graduate School of Medicine, Chicago
- Aug. 5-15 **Second Annual Health Exposition** (New York City Department of Health). New York Coliseum, New York City
- Aug. 8-9 **Southeastern Oklahoma Clinical Symposium.** McAlester Clinic, McAlester, Oklahoma
- Aug. 9-15 **International Congress of Physiological Sciences.** Buenos Aires, Argentina
- Aug. 10-12 **Athletic Injuries.** University of Colorado Medical Center, Denver
- Aug. 10-13 **National Medical Association.** Detroit
- Aug. 15-21 **106th Convention, American Pharmaceutical Association.** Netherland Hilton Hotel, Cincinnati
- Aug. 16-19 **Pediatric Cardiology.** U.C.L.A., Los Angeles
- Aug. 17-18 **Symposium on the Prevention and Treatment of Athletic Injuries** (Department of Physical Education and the Health Service). University of Rhode Island, Kingston
- Aug. 17-22 **International Congress for Speech & Voice Therapy.** London, England
- Aug. 19-22 **Annual Session, Nevada State Medical Association, with the Reno Surgical Society.** Mapes Hotel, Reno
- Aug. 19-23 **Emotional Problems in Office Practice.** U.C.L.A., Los Angeles
- Aug. 20-21 **Annual AMA Public Relations Institute.** Chicago
- Aug. 20-22 **Rocky Mountain Radiological Society.** Shirley-Savoy Hotel, Denver
- Aug. 20-22 **West Virginia State Medical Association.** The Greenbrier, White Sulphur Springs
- Aug. 20-Sept. 8 **International Association of Limnology.** Vienna and Salzburg, Austria
- Aug. 22-26 **Third World Congress of the Deaf.** Wiesbaden, Germany
- Aug. 23-26 **Internal Medicine.** U.C.L.A., Los Angeles
- Aug. 23-26 **Symposium on the Catechol Amines in Cardiovascular Pathology.** University of Vermont College of Medicine, Burlington
- Aug. 24-27 **American Hospital Association.** Statler Hotel, New York City
- Aug. 25-28 **American Dietetic Association.** Statler Hilton, Los Angeles
- Aug. 26-29 **Northwest Proctologic Society.** Timberline Lodge, Mount Hood, Oregon
- Aug. 29-Sept. 4 **Second World Conference on Medical Education** (World Medical Association, World Health Organization, Council for International Organization of Medical Sciences, and International Association of Universities). Palmer House, Chicago
- Aug. 30-Sept. 4 **Thirty-seventh Annual Scientific and Clinical Session, American Congress of Physical Medicine and Rehabilitation.** Hotel Leamington, Minneapolis
- Aug. 30-Sept. 5 **World Federation for Mental Health.** Barcelona, Spain
- Aug. 30-Sept. 6 **International Congress for the History of Science.** Barcelona and Madrid, Spain
- Aug. 31-Sept. 3 **Biological Photographic Association, Inc.** Sheraton-Mount Royal Hotel, Montreal, Canada

- Sept. 1-2 **Sports Medicine Congress.** Chicago Campus, Northwestern University, Chicago
- Sept. 2 **Annual Meeting, American Institute of Ultrasonics in Medicine.** Leamington Hotel, Minneapolis
- Sept. 2-4 **Fourth European Congress of Allergy.** London, England
- Sept. 3-5 **International Congress of Nephrology.** Geneva, Switzerland and Evian, France
- Sept. 3-8 **Pediatrics** (University of Colorado Medical Center). Estes Park
- Sept. 6 **College of American Pathologists.** Palmer House, Chicago
- Sept. 6-9 **Fifth European Symposium on Poliomyelitis.** Munich, Germany
- Sept. 6-12 **World Congress for Physical Therapy.** Paris, France
- Sept. 7-11 **American Society of Clinical Pathologists.** Palmer House, Chicago
- Sept. 7-12 **Seventh Congress, European Society of Haematology.** Bedford College, London, England
- Sept. 7-12 **Thirteenth Assembly, World Medical Association.** Montreal, Canada
- Sept. 8-11 **Combined Annual Session, Colorado State Medical Society and the Biennial Rocky Mountain Medical Conference.** Brown Palace and Shirley-Savoy Hotels, Denver
- Sept. 9-10 **International Congress on Air Pollution.** New York City
- Sept. 10-12 **American Association of Obstetricians & Gynecologists.** The Homestead, Hot Springs, Virginia
- Sept. 10-12 **Oregon Academy of General Practice.** Portland
- Sept. 10-12 **St. John's Hospital Postgraduate Assembly.** St. John's Hospital, Santa Monica
- Sept. 11-18 **International Tuberculosis Conference.** Istanbul, Turkey
- Sept. 12-13 **First International Symposium on Anti-Infectious and Antimitotic Chemotherapy.** Geneva, Switzerland
- Sept. 13-15 **Medical Progress Assembly.** Tutwiler Hotel, Birmingham, Alabama
- Sept. 13-16 **Annual Meeting, Washington State Medical Association.** Olympic Hotel, Seattle
- Sept. 13-17 **Twenty-fourth Annual Congress, International College of Surgeons, North American Federation.** Palmer House, Chicago
- Sept. 14-18 **Board of Internal Medicine Review Course** (For Part I applicants). Cook County Graduate School of Medicine, Chicago
- Sept. 14-25 **Gastroscopy & Gastroenterology.** Cook County Graduate School of Medicine, Chicago
- Sept. 14-25 **General & Surgical Obstetrics.** Cook County Graduate School of Medicine, Chicago
- Sept. 14-Nov. 6 **Occupational Medicine.** New York University Postgraduate Medical School, New York City
- Sept. 16-18 **Utah State Medical Association.** Hotel Utah Motor Lodge, Salt Lake City
- Sept. 17-19 **Montana Medical Association.** Finlen Hotel, Butte
- Sept. 18 **Fall Scientific Session, Louisiana Chapter of the American Academy of Pediatrics, "Malignancies in Childhood"** (Lederle Laboratories). Capitol House, Baton Rouge
- Sept. 18 **Semi-annual Meeting, Medical & Chirurgical Faculty of the State of Maryland.** Ocean City
- Sept. 18-19 **North Pacific Society of Internal Medicine.** Victoria, B. C.
- Sept. 18-20 **International Cardiovascular Society.** Munich, Germany
- Sept. 18-20 **Mid-Continent Psychiatric Association.** Holiday Inn Motor Hotel, St. Louis County, Missouri
- Sept. 18-21 **European Congress on Rheumatism.** Istanbul, Turkey
- Sept. 18-26 **Annual Otolaryngologic Assembly.** University of Illinois College of Medicine, Chicago
- Sept. 19-26 **American College of Gastroenterology.** Biltmore Hotel, Los Angeles
- Sept. 21-24 **Congress of International Union of Railway Medical Services.** Lucerne, Switzerland
- Sept. 21-24 **International Union of the Medical Press.** Cologne, Germany

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|-----------------|---|-----------------------|---|
| Sept. 21-25 | Surgery of the Colon & Rectum. Cook County Graduate School of Medicine, Chicago | Sept. 24-26 | Annual Course in Gastroenterology, American College of Gastroenterology. The Biltmore, Los Angeles |
| Sept. 21-Oct. 2 | Clinical Uses of Radioisotopes. Cook County Graduate School of Medicine, Chicago | Sept. 24-26 | Central Association of Obstetricians & Gynecologists. Drake Hotel, Chicago |
| Sept. 21-Oct. 2 | Intensive Review of Internal Medicine. University of Southern California, Los Angeles | Sept. 25 | Third Annual AAGP Symposium on Infectious Diseases. Battenfeld Auditorium, University of Kansas Medical Center, Kansas City, Kansas |
| Sept. 21-Oct. 2 | Surgical Technic. Cook County Graduate School of Medicine, Chicago | Sept. 23-29 | Tennessee Section, International College of Surgeons, U. S. Section in conjunction with the Tennessee Valley Medical Assembly. Chattanooga |
| Sept. 21-Oct. 3 | International Congress of Cancer Cytology. Madrid, Spain | Sept. 28-30 | Advanced Electrocardiology. University of Nebraska College of Medicine, Omaha |
| Sept. 21-Oct. 3 | International Congress of the International Cardiovascular Society. Munich, Germany | Sept. 28-Oct. 2 | Forty-fifth Annual Clinical Congress, American College of Surgeons. The Traymore Hotel, Atlantic City |
| Sept. 22-24 | Kentucky State Medical Association. Columbia Auditorium, Louisville | Sept. 28-29, Oct. 1-3 | Michigan State Medical Society. Pantlind Hotel, Grand Rapids |
| Sept. 22-24 | Pediatrics for Pediatricians. University of Minnesota, Minneapolis | Sept. 28-Oct. 9 | Office & Operative Gynecology. Cook County Graduate School of Medicine, Chicago |
| Sept. 22-25 | American Roentgen Ray Society. Netherland Hilton Hotel, Cincinnati | Sept. 29-Oct. 1 | Twenty-fourth Annual Meeting, Mississippi Valley Medical Society. Chase Hotel, St. Louis |
| Sept. 23-25 | Annual Meeting, Oregon State Medical Society. Medford Hotel, Medford | | |
| Sept. 24-26 | American Association for the Surgery of Trauma. Mount Washington Hotel, Bretton Woods, N. H. | | |
| Sept. 24-26 | American Association of Medical Clinics. Sheraton-Blackstone Hotel, Chicago | | |

A Danger for the Fetus and the Newborn

As a result of their experiments with drugs in newborn animals, three investigators at the National Institutes of Health have warned obstetricians and pediatricians to use great care in giving such substances to pregnant women and very young infants. In an article that they published in the May issue of *BIOCHEMICAL PHARMACOLOGY*, Drs. Bernard B. Brodie, W. Robert Jondorf and Roger P. Maickel compared the abilities of mice and guinea pigs of various ages to metabolize several commonly-used drugs, including the analgesics, aminopyrine and phenacetin; the barbiturate hexobarbital; the laxative phenolphthalein; and monomethyl-4-aminoantipyrine. Their experiments, they said, showed that the drug-destroying enzyme systems are absent in fetal and newborn guinea pigs, but appear during the first week of life and require about eight weeks to develop fully. Studies of living mice confirmed the liver incubation studies by demonstrating that newborn mice are unable to metabolize aminopyrine, phenacetin or hexobarbital.

An additional potential danger of giving drugs to the newborn was observed in studies of the duration of hexobarbital action. They found that responses to this barbiturate varied greatly among various age groups of mice. Very small doses of the drug (10 mg./kg.) put one-day-old mice to sleep for 360 minutes, and seven-day-old mice to sleep for 107 minutes, though doses of the same size put adult mice to sleep for less than five minutes. These results, the investigators thought, suggest that the undeveloped central nervous systems of the newborn animals are extremely sensitive to the barbiturate and perhaps to other drugs as well.

"That newborn mammals are unable to metabolize these compounds is of obvious importance in

considering the use of drugs in childbirth and for newborn infants," they concluded.

CARDIAC CONFERENCE IN IOWA CITY

The biennial Midwest Cardiac Conference sponsored jointly by the Iowa Heart Association and the S.U.I. College of Medicine will be held in Iowa City on November 19, 20 and 21. The speakers will include Dr. Frederick Barter, of the National Institutes of Health; Dr. Raymond Gifford, Jr., of the Mayo Clinic; Dr. John Moyer, of Hahnemann Medical School, Philadelphia; and Dr. C. W. Lillehei, of the University of Minnesota.

Because November 21 is the day of the Iowa-Notre Dame football game in Iowa City, it is suggested that doctors do three things immediately: (1) Mark the dates November 19-21 on the calendar; (2) order football tickets from the S.U.I. Athletic Department; and (3) arrange for a place to stay, since accommodations will be at a premium.

Help your central office to maintain an accurate mailing list. Send your change of address promptly to the Journal, 529-36th Street, Des Moines 12, Iowa.



PHYSICIAN DISTRIBUTION SURVEY

If you haven't yet completed and returned your biographical information questionnaire, or if you know that one of your physician acquaintances hasn't, won't you please see to it that the blank is filled out and put into the mail immediately?

The responses total in excess of 1,600 as this is written. In other words, two out of three doctors have replied. But the questions we asked aren't of the usual sort, to which answers from a great majority of doctors might adequately serve the purpose by indicating a predominance of opinion. Rather, since we asked for facts, nothing less than 100 per cent cooperation will suffice.

If you have mislaid your questionnaire, please let us know so that we can send you a replacement.

VOICE YOUR PROTEST!

It has now begun to appear that Congress will stay in session very late this summer, in preference to staying at work until the opening of the first of the National Conventions in the summer of 1960. In consequence, it is possible that decisive action on the Forand Bill may be taken more promptly than was anticipated as recently as a couple of months ago.

Certainly every physician who values his present freedom to practice medicine and believes that any new inroads upon the free-enterprise system would be bad for America should voice his opposition to the Forand Bill in letters to some of the members of the House Ways and Means Committee, which is currently taking testimony on it. The Committee members' names will be found on page fifty among the "Personals" in this issue of the JOURNAL.

Everyone must realize that if the Forand Bill were to become law, its provisions would subsequently be broadened so as to provide federally financed hospitalization and medical and surgical care for all of the people, in a system closely resembling the British National Health Service. But few people are aware of the tremendous new bureaucracy with which such a development would saddle the country. In an article published in the NEW ENGLAND JOURNAL OF MEDICINE, Mr. Paul F. Gemmill, a professor of economics at the University of Pennsylvania, reported that in ex-

cess of 500,000 people are now on the payroll of the British system of government medicine.* If, as one gathers from the partial breakdown that he supplied, roughly half of those individuals are neither doctors nor nurses, and since the United States has more than twice as many people as Britain, it is a good guess that a similar organization in this country would employ more than a million people, half a million of whom would be records-keepers and administrators!

The Forand Bill is extremely unwise in that it would rapidly burden physicians with paper work and ensnarl them in red tape, but it would also be enormously expensive. There, certainly, is a point that each of us should stress in the letters he writes to Washington.

President Eisenhower has attracted tremendous support for his opposition to all big-spending proposals, and of the new programs that Congress is considering, the Forand Bill would be one of the most expensive. TIME reported in its July 20 issue that the LOS ANGELES TIMES persuaded readers to mail 30,000 letters to California members of Congress warning them of the inflationary pressure of federal spending, and that 130,000 readers clipped coupons bearing a similar message from issues of the CHICAGO TRIBUNE and sent them either to their legislators in Springfield or to their congressmen in Washington.

From any number of angles, the Forand Bill is one of the most dangerous proposals ever offered to Congress. Let's each of us take an active part in opposing it (1) because it would destroy the efficiency of the American medical profession; (2) because it would be a long step toward the destruction of the American free-enterprise system; and (3) because it would accelerate inflation, thus making life increasingly difficult for the very people it was designed to help.

5 HYDROXYTRAPTAMINE

Progress in the field of gastroenterology has been almost non-existent in the past 30 years. To be sure, many volumes have been written about it, but they represented, for the most part statistical analyses and descriptions of various unusual disease entities. Basic research in the field has, however, lagged far behind that in the other branches of internal medicine.

One break-through has been the proposal that gastric acids may be influenced by non-beta cells in the islands of Langerhans. Another has been the discovery of certain functional components of the carcinoid tumors. Dr. Waldenstrom, of Malmö, Sweden, has reviewed the development of this problem in a recent article.* He describes the concept that the so-called Kultshitzky cells, the mother cells of the carcinoids, produce a substance called 5 hydroxytraptamine, or 5HT. It is

* Gemmill, P. F.: British Health Service today. NEW ENGLAND J. MED., 259:19-23, (July 3) 1958.

* Waldenstrom, J.: Clinical picture of carcinoidosis. GASTROENTEROL., 35:565-569, (Dec.) 1958.

broken down to a large extent in the liver and lungs by amino oxidase, which changes 5HT into 5HIAA (5 hydroxyindolacetic acid). The latter substance is excreted in the urine and is a valuable indicator of increased 5HT activity in the body.

When 5HT is dumped in large amounts into the blood stream *extrapolally*, a peculiar flushing occurs for a brief period (five or 10 minutes). The patient's face is usually bright red. Tachycardia, hyperperistalsis and abdominal colic are also present. In some cases, pulmonary and tricuspid-valve changes occur, so that such valvular heart disease is produced "biochemically."

Here, then, is evidence of a powerful substance that is produced in the gastrointestinal tract, causing abdominal pain, increased peristalsis (or sometimes decreased peristalsis) and diarrhea. It also produces other far-flung symptoms and signs. The complete picture of 5HT metabolism has not yet been worked out. Certain relations with histamine and other substances are yet to be elucidated. Yet, the fact that these two new substances, the material produced by the non-beta cells of the pancreatic islets and the Kulshitzky cells of the carcinoids have been introduced to us should give us hope that in the future similar substances may be discovered to clarify the foggy vistas of regional enteritis, ulcerative colitis, gastritis and duodenal ulcer. Certainly further investigations of urinary indoles in intestinal disorders would seem worthwhile.

Perhaps the future will see us treating these diseases sensibly, instead of empirically!

HEALTH INSURANCE FOR THE AGED IS GROWING RAPIDLY

Health insurance coverage for people past 65 is being expanded steadily on two fronts: through the efforts of many Blue Shield and Blue Cross plans, and also in the field of commercial insurance.

Growth in over-65 coverage by Blue Cross and Blue Shield has been accelerating rapidly. In the last six months, the number of medical-society-sponsored Blue Shield plans offering coverage of persons over 65 on initial enrollment has increased from eight to a present 21 plans in the states of Arkansas, Mississippi, Nebraska, Indiana, New Hampshire, Vermont, Ohio, Florida, Connecticut, Iowa, California, Wisconsin, North Dakota, Massachusetts, and Arizona; and the cities of St. Louis and Kansas City, Missouri; Buffalo, New York; Milwaukee, Wisconsin; and Seattle, Washington.

In 13 of these states, the Blue Cross plans also offer over-65 coverage on initial enrollment. In these 13 states, 10 Blue Shield plans provide or will shortly provide benefits on a service basis; that is, participating physicians have agreed to accept adjusted fees for service to persons below certain income levels, and are paid these amounts

in full by the Plan. The other five Blue Shield plans operate on an indemnity, or set cash payment basis, regardless of the physician's fees. However, a number of these latter plans are now working with the medical society and hospital group to develop full payment or service programs for low income groups.

In the remaining six states, five of the Blue Shield Plans are now or shortly will be providing benefits on a service basis, and the sixth operates on the indemnity principle.

Twenty-four additional plans in 14 states and Hawaii are presently working with their medical societies to develop and prescribe a scope of benefits for the over-65 group.

Commercial carriers are increasingly beginning to experiment in this field also. Two additional companies, Fireman's Fund in San Francisco, and Mutual of Omaha, have developed over-65 insurance programs, and Continental Casualty Company of Chicago has expanded its "65 Plus" policy—one of the first commercial programs to be offered—to include 12 states and the District of Columbia. All three companies follow the "informal group" principle, enrolling everyone past 65 within a state who applies during a stipulated period as a member of the "group." Benefits offered include specified *per diem* amounts for hospital care, usually up to 31 days, graduated allowances for surgical procedures, and specified percentages or amounts for hospital "extras" such as dressings or operating costs. Mutual of Omaha more recently announced a policy providing benefits for nursing home care after at least five days in the hospital, which is being sold in 45 states and the District of Columbia. The Fireman's Fund Company is offering its "Fund/65" plan in California.

—from CHRONIC ILLNESS NEWSLETTER,
(AMA Council on Medical Sciences)
June, 1959.

SPEAKERS FOR COUNTY SOCIETY MEETINGS

The Iowa Trudeau Society has announced that selected ones of its members are available to speak at county medical society meetings, and that as a part of its professional education efforts, it will pay those speakers' travel and hotel expenses. Honoraria are neither expected nor granted.

During the past year, the Trudeau Society sponsored a number of such presentations. Dr. M. E. Alberts, of Des Moines, spoke on "Pulmonary Diseases in Children" at Oelwein; Dr. James E. Kelsey, of Des Moines, gave a paper on "Some Problems of Emphysema" in Estherville; Dr. Paul From, of Des Moines, and Dr. Ian Maclean Smith, of SUI, discussed "Pulmonary Disorders in Elderly Persons" at Waterloo; and Dr. Daniel F. Crowley, of Des Moines, talked on "The Meaning of the Solitary Pulmonary Nodule" in Davenport.

Program committees for county medical societies are invited to select from a list of seven topics:

1. Pulmonary diseases in children
2. Problems of emphysema
3. The meaning of the solitary pulmonary nodule
4. The impact of tuberculosis on general practice
5. The "vanishing lung" and associated conditions
6. Chronic pulmonary disease as seen by the radiologist
7. Pulmonary disorders among elderly persons.

The Trudeau Society's guest-speaker program is in the hands of a committee consisting of Dr. Leon J. Galinsky, Des Moines, chairman; Dr. H. W. Rathe, Waverly; and Dr. Walter M. Kirkendall, Iowa City. Requests for Trudeau speakers can be addressed either to the Iowa Trudeau Society, 2124 Grand Avenue, Des Moines 12, or to the ISMS Speakers' Bureau, 529 Thirty-sixth Street, Des Moines 12.

Letter to the Editor

BLUE SHIELD—NOLO NOCERE

Sir:

Recently, doctors have been talking about medical insurance. Very frequently they have not understood one another. Since we do not ordinarily discuss such subjects as we do scientific matters, it is not surprising that we understand each other poorly. I had the good fortune to record a conversation between two men who made clear many of the ideas which have not appeared in the JOURNAL OF THE IOWA STATE MEDICAL SOCIETY, but have been heard abundantly in committee meetings, delegate sessions, and in cloakrooms. I feel sure that these ideas are better expressed by them than they might be in a formal statement, and I offer their talk for your consideration. The gentlemen were Socrates Hippocrates, a physician from a medical family, and Antiphone, a rather irascible fellow whose identity we never learned. This is what they said.

Anti: I hear you have become a sore-head and resigned from Blue Shield. Are you being your usual reactionary self?

Soc: I'll ignore the personal remarks. Yes, I resigned from Blue Shield with regret because I have always supported it.

Anti: In that case you must have had a good reason.

Soc: I had several compelling reasons. If you are honestly interested in them I'll tell you about them. If you are indifferent, however, say so, for like many other doctors in Iowa, I feel too keenly about this to be at all casual.

Anti: I'll listen, but I may ask some embarrassing questions. Where do we start?

Soc: Let's talk about Blue Shield as a philosophy. I was attracted to the original idea of offering a special insurance to low income groups to help them meet the sudden costs of unexpected illness, especially illness requiring hospitalization and surgery. The aim of Blue Shield in its inception was to provide this help only. Now it wishes to expand its coverage to become less strictly a kind of social action and more a highly competitive business action. I am sure that the medical society should not be in the insurance field simply because we are concerned with health. We might just as logically operate our own life insurance plan.

Anti: But I have been told that private insurance companies are anxious to keep Blue Shield in business.

Soc: Some people seem to think so. It is hard to know if that is true, but it wouldn't be too surprising if they wished to have Blue Shield exist when it has a fee schedule below normal charges. The private insurance company may always refuse to pay more than the fee set by the "medical society itself."

Anti: Oh, then this is really just a fee squabble.

Soc: No, but fees are obviously of great importance. But let's by-pass them now and talk in terms of basic principles. They are more important.

SENIOR-65

Anti: I don't see how you can object to the policy for older people if you are going to talk in highly moral tones.

Soc: On the contrary, my chief objection to it is moral. I am afraid this policy was designed to bring favorable public reaction to the medical society, rather than to give relief to the suffering. Only one of the many difficulties faced by old people is the cost of living. We have been told that the average income of those needing help in Iowa is \$1,600 a year, or about \$135 a month. An elderly couple in this income bracket needs help not only with medical care but also with the rent, water, gas, clothes, food, and so on. A 70-year-old couple in an average Iowa town lives at a bare subsistence level on \$1,600, using every penny every month, and then I don't know how they can do it.

Anti: I follow you. For that reason they are not going to be the ones who buy the Senior-65 policy because they can't afford it, and the chief subscribers will be old people in higher income brackets.

Soc: Now you're catching on. Furthermore, the current plan offers only 31 days of hospitalization a year, does not give full coverage of hospital costs, and of course still leaves all the other bills for office visits, drugs, and other necessities.

Anti: Fine, but aren't you just being obstruc-

Statements published in these columns are not to be taken as reflections of the opinions or attitudes of the editors of the JOURNAL.

tionistic, as usual, opposing and never proposing? What are you going to do for these poor people, then?

Soc: What my colleagues and I have always done. We will charge less if the patients can afford less; nothing if they can afford nothing. And I will do it without the added waste of performing this act through an insurance company. It is absurd to make a costly burden out of a free act of professional conscience. All Blue Shield proposes is to have the subscriber pay a premium to get what he receives now anyway. We cannot, unfortunately, solve all the problems of older people even if we offer them free care. It is going to be up to the entire community to do that. We shall be glad to work with them toward that end.

Anti: I think you lack imagination. The Senior-65 policy will work. All you have to do is get a similar 40 to 60 per cent reduction in charges from the utility companies, banks, landlords, grocers, and taxing bodies, and the problem is solved!

Soc: Now I warned you against such facetiousness! If you won't be serious—

THE \$5,400 INCOME LIMIT

Anti: All right, all right. You and your wife Xan are too intense about this. Let's get to the other part, the \$5,400 policy. Surely there is nothing so bad about that! It is just an extension again of full coverage to higher income groups to adjust for the changes in our total economy.

Soc: On the contrary, this is the most offensive part of the Blue Shield program. At this point you must listen carefully because the objections are several and often depend on one another. What you said about the policy is far from the truth. In the opinion of many doctors, probably a majority, it is a marked departure from the past. Not only does it attempt to cover fully the needs of people who can afford the costs of medical care, but it wishes to do so at fees which are lower than those now charged.

Anti: I'll admit that people with family incomes of \$5,400, especially in small towns, clearly are not members of the "economic stress" group. But what is this about lower fees? Weren't they agreed to by the doctors themselves?

Soc: Wrong again! A relative-value schedule was painfully squeezed out by compromise and without general acceptance with the understanding that it would not be used as a blanket schedule for all branches of practitioners. When Blue Shield adopted it, the schedule not only was used in this non-selective fashion but with an entirely different base line from the one used in its formation. At its best it was poor, but as now applied it is intolerable. Naturally, we all resent the implication that standard fees are so high they can be reduced by a considerable percentage and still be acceptable. We can't help feeling we have been tricked.

Anti: I'm surprised I haven't heard you scream "socialized medicine" yet.

Soc: It is a little embarrassing to use that old battle cry, but for once you're right. Too many doctors equate socialized medicine with government control. Medicine begins to be socialized when there is participation of any third party. The plan we are discussing would deny the physician the right to determine his own fees. We accept this for low income groups now. The fact that Blue Shield is "our insurance" makes it no more attractive; the government is also ours. But we are greatly distressed at the prospect of having fees set for us for 50 to 60 per cent of the population, and perhaps later for 90 per cent, and for office and home care as well.

Anti: Take it easy, Hippocrates. This plan applies only to hospital care.

Soc: Now it does, but it has been clearly stated that Blue Shield is interested in removing hospitalization as a prerequisite for utilization. Our brief experience thus far has demonstrated how ineffective we will be in preventing further advances by Blue Shield if the present plans are allowed to flourish.

Anti: Your trouble is that you are a poor politician.

Soc: I am sure that is true. What's more I would prefer to remain uninvolved, but such a course has become impossible. As you know, a favorite argument of those who have promoted Blue Shield is that it is a bulwark against socialized medicine. This is pure conjecture, but if the bulwark is socialized medicine in another guise, it is simply defeatism and totally unjustified.

Anti: You are improving. You sound more like a politician now. Are you against *all* medical insurance?

Soc: Certainly not. My colleagues and I strongly favor the original coverage for low income groups. We have also had very good experience with most of the private companies—especially the larger, highly ethical groups. For Blue Shield, we prefer a policy which involves the subscriber in a greater financial responsibility.

Anti: You mean you want the patient to pay the first \$25 or \$50? I suppose that is to avoid overuse of the insurance which is the main cause for Blue Shield's troubles.

Soc: Yes, let him pay as he does for automobile collision insurance. Let him reserve hospitalization for only real need. An alternative is to make him responsible for a portion of the total cost—25 per cent for example.

Anti: But will that sell?

Soc: I really don't know. I do know that if we face the alternatives of the survival of Blue Shield or of private medical practice, I will unhesitatingly choose the latter.

Anti: But is this your own decision? If social-

ized medicine comes in governmental form, will it not be despite the medical profession?

Soc: Of course it will. But no elected or appointed official in this country will want to disrupt the quality or basic form of medical practice. If socialized (state) medicine comes, it will utilize established patterns—especially those put in effect by doctors. It is especially important that any formalization reflect the current practice, not the artificial one supported by Blue Shield.

MORE CONTROVERSIAL MATTERS

Anti: Now we are touching on fees again. Are you trying to make me think you don't care about money?

Soc: I'm not that dumb. Now we'll get onto a more sensitive subject. I live in one of the bigger cities, and I charge more for an office call than I did when I practiced in a town of 1,500. If I charged the same as I did then, I'd have less actual grocery money. I also know that although a fee is often standardized, it is better to keep it flexible to adjust to individual situations.

Anti: You mean so you can soak the rich?

Soc: No. I don't try to play Robin Hood in my office or in the hospital. . . . But some patients take more time than others, and most of us have only our time to sell in the commercial sense. Furthermore, some problems require extraordinary skill which is difficult to evaluate but may at times justify a higher fee. That is a more elusive point, I'll admit.

Anti: On that point, and on fees in general, I should think there are differences of opinion among specialists themselves, and between general practitioners and specialists.

Soc: Believe me, there are. Those who specialize in internal medicine, for example are strongly opposed to the idea that any professional service has a like value regardless of who performs it. They feel that the extra time routinely spent in examining the patient and the additional knowledge derived from years of concentrated study justify fees in accordance with these values. That attitude is shared by others such as pediatricians and dermatologists who wish only the freedom to maintain the *status quo* which allows an income similar to their colleagues'.

Anti: How would Blue Shield change this?

Soc: It makes no distinction between doctors. It would pay the same for the treatment of an eye infection to a general practitioner, psychiatrist, or orthopedic surgeon as it would to an ophthalmologist. I know that sounds silly, but it is Blue Shield practice and its officers attempt to defend it.

Anti: I must say that this is contrary to general knowledge of the medical skills.

Soc: Yes, and contrary to the well established patterns of medical schools, Veterans Administration and the armed forces, insurance companies, and in fact everyone but "our insurance company."

Anti: Would you accept Blue Shield if these inequities were corrected?

Soc: Apparently I haven't convinced you of my sincerity. My opposition as a matter of principle is a part of my whole professional creed.

Anti: I'm not sure you have convinced me, for some of this is new to me. But I will think about it.

Soc: That's all I ask of you or of anyone. Why are you still uncertain?

Anti: I still think there should be some way to make medical care cheaper.

Soc: The only way I know is to lessen its quality. There will never be a way to make illness anything but a burden. The cheapest sickness is one which is quickly fatal. It is more expensive to recover. Certainly the great enigma of the aging population remains unsolved. It will not help to make an obviously futile gesture as a sign of good intent, because the ultimate failure will prove costly and embittering.

Anti: Now what about Social Security for doctors?

Soc: Oh, no you don't! Some other time.

HAROLD MARGULIES, M.D.

Des Moines, Iowa

CLINICAL CONGRESS OF AMERICAN COLLEGE OF SURGEONS

The 45th annual Clinical Congress of the American College of Surgeons will be held in Atlantic City on September 28 through October 2, 1959. Surgical developments will be presented by means of a wide variety of programs, including nine post-graduate courses, panel discussions, symposia, research reports, motion pictures, closed-circuit color telecasts from Bellevue Hospital, New York City, cine clinics, and scientific and industrial exhibits.

Major addresses will be given by Dean Rusk, M.D., president of the Rockefeller Foundation; Owen Wangenstein, M.D., of the University of Minnesota, the incoming president of the College; Dr. R. Arnold Griswold, of Louisville (abdominal injuries); and Dr. David Paton Cuthbertson, of Bucksburn, Scotland (parenteral fluid therapy).

Please Mark Your Calendar

ISMS ANNUAL MEETING

April 24-27, 1960

Veterans' Memorial Auditorium

Des Moines

Blue Shield States Its Case

Benefits of the Respective Policies

EARL C. LOWRY, M.D.

DES MOINES

THE PURPOSE OF this paper is to call the attention of physicians to the fact that Blue Shield subscribers may hold any one of six different basic contracts. These contracts have variable subscription rates, and the amounts paid for services rendered are different. It appears from billings we receive that physicians are not generally familiar with these variations.

Plan A-250, Surgical and Medical Benefits is by far the most common contract in operation under Blue Shield. There are approximately 233,000 of these in operation, covering some 590,000 people. Samples of the fees payable for surgical and medical benefits are contained in the contract. However, they are also to be found in the Schedule of Service Benefits (yellow book), which became effective April 1, 1953. It is a generally complete fee schedule, and it contains special instructions regarding anesthesiology, medical visits and multiple surgical procedures done at one sitting.

Plan B-300. There are some 3,500 such contracts, covering approximately 9,000 people. Payments for services rendered under this certificate are made in accordance with the Iowa Relative Value Schedule (red book) prepared by the Fee Committee on Medical Services and adopted by the Executive Council of the Iowa State Medical Society. The rates are \$3 per unit as shown therein.

Plan B-400. These are new contracts, and very few of them have been sold to date. Payments for services rendered under them are based on the Iowa Unit Fee Index (grey book) approved by the House of Delegates of the Iowa State Medical Society in April, 1958. The basic rate is \$4 per unit.

Blue Chip. There are some 4,000 Blue Chip contracts in operation, covering about 11,000 people. The contract provides payment of "the customary usual and reasonable charge for the following professional services when provided by participating physicians . . . by Iowa Medical Service subject to the limitations set forth in this contract." In order to set subscriber rates, it is necessary to define the sum of customary charges. Information furnished us to use as a basis for setting these rates indicated that the mean of the customary charges would not exceed \$5 per unit according to the Iowa Unit Fee Index of April, 1958. Premiums were then assessed accordingly. Experience, however, shows that the customary and usual charge is slowly exceeding this level in the overall aggregate.

Participation in Blue Shield requires certain responsibilities of its members. (1) They must keep informed. (2) They must actively search out informed and dedicated persons to direct Blue Shield affairs. (3) They must learn not to use Blue Shield as a buffer between disagreeing segments of the medical profession. (4) They must come to realize that Blue Shield is regulated by insurance laws and principles. (5) They must rededicate themselves to the service principle on which Blue Shield was founded. (6) They must believe in Blue Shield and make the weight of their ideals and their morality felt in determining its aims.

Plan Senior 65. Iowa, along with California, was among the first states to develop a program for aged persons of modest resources and low income. Some 4,500 of these policies are in operation. They are all single contracts. The basic rate of payment for benefits under this policy is \$2 per unit by the Iowa Unit Fee Index (grey book) dated April, 1958. It is notable that this level is approximately 80 per cent, over-all, of the level of fees for Policy A-250, though it appears that physicians generally believe the rate to be much lower. Medical visits are \$5 for the first day and \$2 for each day thereafter up to 30 days, with extra allowances for a difficult case or prolonged detention.

Plan X-L. Most of you will recall that the benefits for laboratory and radiology services were transferred in 1957 from Blue Cross to Blue Shield. There are some 100,000 persons who continue to carry only laboratory and radiology coverage. Payments for these services under all policies then on sale are made by Blue Shield in accordance with the Joint Agreement reached at the time of the transfer. For new policies, Senior 65 and B-400, the rate is \$3 per unit and \$5 per unit, respectively, according to the Iowa Unit Fee Index, (grey book) dated April, 1958.

The attached chart shows a summary of the statistics on the above, and shows the service income levels for the respective policies. These levels apply only to the individual policy as shown.

Policy	Number of Contracts	Number of People Covered	Full-Service Income Levels		
			Single	Two-Person	Family
A-250	235,276	597,000	\$2,400	\$3,000	\$3,600
B-300	3,538	9,000	2,400	3,000	3,600
B-400			3,600	4,500	5,400
Blue Chip	4,100	11,000	All on Deductible as Stated		
Senior 65	4,500	4,500	2,000	3,000	
XL	40,000	100,000	All on Deductible as Stated		
Total Population: 2,600,000					

COMMERCIAL INSURERS EXPAND BENEFITS

The Health Insurance Council, a cooperative of the commercial health insurance carriers, has issued some interesting statistics which show that benefits paid to policyholders are rising far more rapidly than are the costs of hospital and medical care.

In 1957, the Council says, there was a 16.7 per cent increase in total health insurance benefit payments over the year before, as compared to a 4.7 per cent increase in the number of persons with health insurance over 1956. From 1952 to the end of 1957, total health insurance benefit payments rose 103.9 per cent, in contrast to a 33.5 per cent rise in the number of persons with health insurance during the same period. These total benefit payments apply to hospital, surgical and medical bills, as well as toward the replacement of income lost due to disability.

Hospital, surgical and medical benefit payments alone, in 1957, rose 19.1 per cent over 1956, as compared to an increase of 4.1 per cent in hospital and medical care costs during the same period. Over the six-year period from 1952 to 1957, these hospital, surgical and medical benefit payments increased 118.0 per cent, whereas hospital and medical care costs rose 17.7 per cent.

The Health Insurance Council also reported that 13,262,000 persons were protected by major medical expense insurance in 1957, representing a 49.4 per cent increase over the number of persons with this type of protection in 1956. "Major medical" policies are distinguished by large benefit limits, usually as high as \$5,000 or \$10,000, a "deductible" amount (as in automobile collision insurance) and a "co-insurance" feature whereby the protected person pays a certain percentage of the total expenses above the "deductible" amount. The number of persons protected by "major medical" insurance was no more than 2,000,000 as recently as 1954.

CALIFORNIA'S MD-PLAN 65

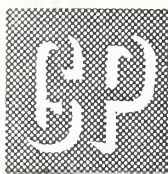
California Physicians' Service, the Blue Shield plan that serves the entire state, has begun offering its "MD-Plan 65" covering surgery and physicians' visits at the hospital, in the home and in the office. Limited x-ray and laboratory benefits are also provided.

Physicians of the California Medical Association have approved a special lower schedule of fees in order to make the needed benefits to senior citizens available at a reasonable cost. The income limits for full service are \$3,000 for an individual (\$4,500 for a married couple), and the premiums for a "deductible" policy requiring the insured to make "a nominal co-payment" are \$6.90 per month for a man and \$7.90 for a woman.

DOCTORS' NURSES ORGANIZE

A new non-profit association has been incorporated and has assumed the membership of the old American Registry of Doctors' Nurses. The new organization, the American Association of Doctors' Nurses, has its headquarters in the American Building, Washington, D. C., and is intended (1) to promote the welfare of its members, (2) to elevate the standards and ethics of their profession, and (3) to enroll doctors' nurses in order that they may advance their status as proved members of their profession. To become a member, a doctor's nurse must show that she has certain qualifications, one of which is experience. The membership will be open to trained nurses and practical nurses presently working in doctors' offices, as well as to women who have never done any other kind of nursing work.

State and local chapters will be organized.



Iowa Academy of General Practice

ELEVENTH ANNUAL MEETING AND SCIENTIFIC ASSEMBLY

The Iowa Chapter of the American Academy of General Practice will hold its Eleventh Annual Meeting and Scientific Assembly at the Hotel Savery, in Des Moines, on September 27, 28 and 29, 1959.

The pattern of the two previous annual meetings will be followed in that the annual business meeting will be held on Sunday afternoon September 27, preceding the scientific sessions. Academy members are urged to attend and participate. At this meeting, the reports of officers, committees and delegates will be presented, and the officers for the coming year will be elected.

The Scientific Assembly will begin on Monday morning, September 28, and will continue through Tuesday, September 29. In choosing the topics and the speakers who are to discuss them, the program committee has observed two criteria: (1) the subject must be of interest to GP's, and (2) the speaker must be an authority on the subject. Note also the interesting luncheon topics and well-qualified speakers.

Last year, our Hospitality Room for the ladies proved to be very popular, so again that provision has been made for their relaxation.

The social highlight of the Assembly will be the Annual Banquet, on Monday evening September 28 at the Hotel Savery. A social hour will precede the banquet, and a dancing party will follow it. Tickets for the luncheons and the banquet will be on sale at the registration desk. Please purchase your tickets early, for table reservations must be made early each day.

All physicians and their wives, internes and nurses are invited to attend the Scientific Assembly. There will be no registration fee for Academy members, internes or nurses, but there will be a small fee for non-member physicians.

Please Mark Your Calendar
ISMS ANNUAL MEETING
April 24-27, 1960
Veterans' Memorial Auditorium
Des Moines

SCIENTIFIC PROGRAM

Monday, September 28

- "Contact Dermatitis"—Richard Q. Crotty, M.D., Omaha
"Infant Feeding"—Robert Fairchild, M.D., Mission, Kansas
"Animal-Transmitted Diseases"—Richard Tjalma, D.V.M., Iowa City
"Uses and Abuses of Antibiotics"—George R. Fisher, M.D., Philadelphia
LUNCHEON "Satellites"—George Ludwig, Iowa City
"Cardiac Arrhythmias"—Herman J. Smith, M.D., Des Moines
"What's New in Dermatology"—Dr. Crotty
"Accidents in Children"—Dr. Fairchild
"Uses and Abuses of Steroids"—Dr. Fisher

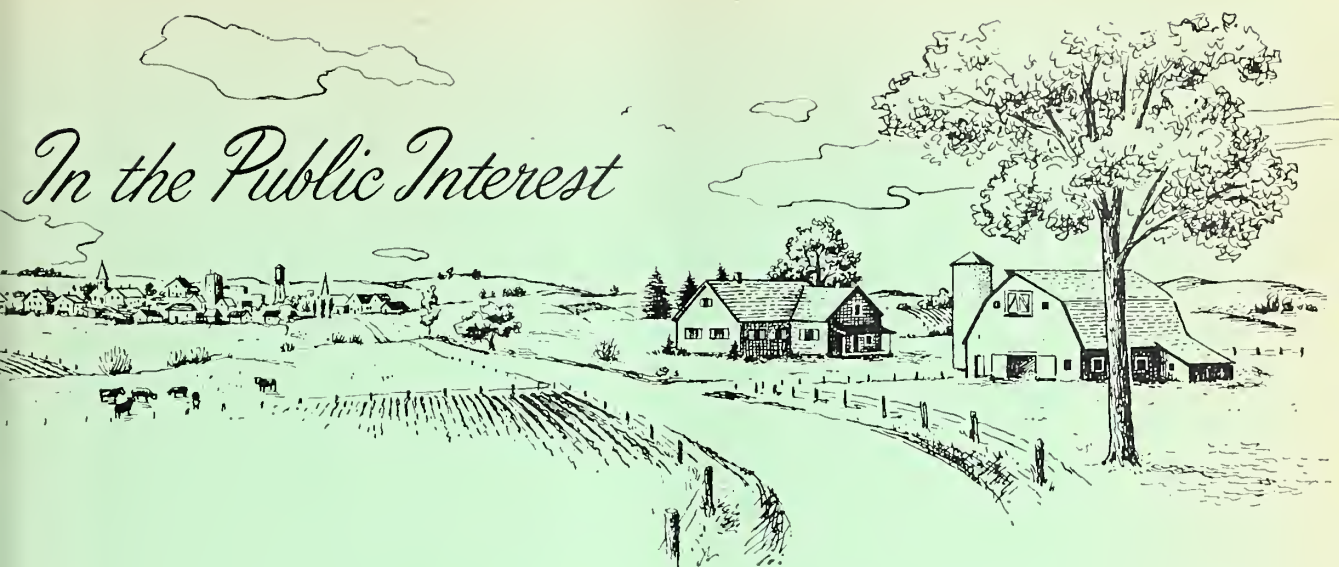
Tuesday, September 29

- "Management of Inguinal and Femoral Hernias"—N. Frederick Hicken, M.D., Salt Lake City
"Fractures in Children"—A. DellaPietra, M.D., New Haven
"Office Gynecology"—Preston T. Brown, M.D., Phoenix
"Orthopedic Anatomy in General Practice"—Dr. DellaPietra
LUNCHEON "What's Your T.Q.?"—Miss Frances Colflesh, Northwestern Bell Telephone Company, Des Moines
"The Patient's Pilgrimage—A Commentary on the Evolution of Medical Care and Medical Sciences"—W. B. Bean, M.D., Iowa City
"Abdominal Trauma"—Dr. Hicken
"Obstetrical Emergencies"—Dr. Brown

AAGP SYMPOSIUM ON INFECTIOUS DISEASES

The third annual AAGP Symposium on Infectious Diseases will be held at the Battenfeld Auditorium, University of Kansas Medical Center, Kansas City, Kansas, on September 25. No fees will be charged.

Subject areas to be covered include pulmonary infections, meningitis, urinary tract infections, fluorescent antibody diagnostic methods, wheezes, sneezes and other diseases, and subacute bacterial endocarditis. The speakers will be Dr. Irving Kass, of the University of Colorado; Dr. Mark H. Lepper, of the University of Illinois; Dr. Lowell A. Rantz, of Stanford University; Dr. Charles C. Shepard, medical director, U.S.P.H.S.; Dr. Alfred S. Evans, of the University of Wisconsin; and Dr. Morton Hamburger, of the University of Cincinnati.



In the Public Interest

All in Just One Year!

Virtually every one of the Iowa State Medical Society's standing and special committees was both active and productive during the past 12 months, and in consequence their reports, as published in the July issue of the *JOURNAL*, made up many, many pages of solid reading matter. Those accounts doubtless were too lengthy for many busy doctors to read, and thus a review of the highlights is in order.

JOINT COUNCIL ON HEALTH CARE FOR THE AGED

At the suggestion of the ISMS, representatives of the state organizations of dentists, hospitals and nurses met with doctors of medicine to form the Iowa Joint Council on Health Care for the Aged, the first such group in the country to be set up on the state level. Its first project—the one on which it is currently engaged—is a statistical study of the health needs of elderly people in the state.

MEDICAL PLANS FOR THE CARE OF MASS CASUALTIES

Likewise in cooperation with leaders of the other health professions, through the Iowa Inter-professional Association, the ISMS had a principal share in setting up a statewide plan for the emergency care of victims when and wherever natural or man-made disasters occur. Regional and local administrations were set up; and the state director of Civil Service agreed to make their personnel members of his official staff; and dry-run disaster drills were held in several localities.

IOWA ASSOCIATION OF BLOOD BANKS

The ISMS Blood Banking Committee has been instrumental in the establishment of the Iowa Association of Blood Banks, an organization that is needed in order to standardize procedures and facilitate cooperation among the many such institutions that are operating throughout the state.

THE ISMS EDUCATIONAL AND SCIENTIFIC TRUST

In pursuance of instructions given it by the House of Delegates in April, 1958, the Committee on Public Health proceeded, this past year, with the formation of the ISMS Educational and Scientific Trust. The purpose of the new establishment will be to further educational, scientific and charitable work in preventive medicine and public health.

IOWA PHYSICIAN DISTRIBUTION SURVEY

The initial stages of a physician distribution survey that the ISMS has begun show that among the 99 Iowa counties the ratios of doctors of medicine to residents vary between 1:700 and 1:4,000, as against a ratio of approximately 1:2,000 for the nation as a whole. Right now, the Society's investigators are (1) refining the statistics so as to determine, county by county, the relative availability of physicians who undertake to render general services to all comers, as distinguished from those (VA and industrial physicians for example) who serve restricted groups, and those who for the most part treat patients only on referral and undertake only selected cases (specialists); and (2) attempting to forecast, on the basis of age distributions of present practitioners, county by county, where the major scarcities of doctors will exist 10 or 15 years hence. When those tasks have been completed, the ISMS Physician Placement Service will be able to concentrate its efforts on persuading young doctors to locate where they are most needed.

ISMS "SENIOR DAY" AT THE S.U.I. COLLEGE OF MEDICINE

In May, 1959, as in the springs of several preceding years, several of the officers and other members of ISMS and its Auxiliary spent a day in Iowa City talking with the seniors at the College of Medicine and their wives, principally about Iowa's medical needs and about the satisfactions

and other advantages that Iowa practices offer to young medics. The day's activities concluded with a dinner and dance at which the young people were the guests of the Society.

REGIONAL POSTGRADUATE COURSES FOR PHYSICIANS

Though the State Medical Society conducts a 2½-day scientific program each year at its annual meeting, and though the S.U.I. College of Medicine, the Iowa Academy of General Practice, the principal specialty groups, some of the national health organizations and the local medical societies in the more populous counties also present numerous refresher courses each year, it was decided a year ago that the ISMS and the S.U.I. College of Medicine should cooperate in presenting regional lectures for doctors each year.

This year, such courses are to be offered in Burlington and Council Bluffs.

THE PRECEPTORSHIP PROGRAM

Iowa was one of the first states to set up an arrangement by which medical students have opportunities to observe the work of private practitioners at first hand—not only to see for themselves the variety of ailments they treat and the ways they treat them, but also to take a look at how established doctors and their wives live, day in and day out. Under the preceptorship program conducted jointly by ISMS and S.U.I., each of the 100 junior students spends a whole month observing and working with an Iowa doctor. The preceptees find that private practices are different, in many ways, from practices in large institutions like University Hospitals, and they have opportunities to learn a great deal. The preceptors, similarly, enjoy their experiences with the young men assigned to them, and the Society no longer has any considerable difficulty in getting 100 physicians to undertake such responsibilities.

THE GRIEVANCE COMMITTEE

The ISMS Grievance Committee was set up in order to facilitate understanding between individual doctors and their patients. It analyzes and discusses the cases brought before it, and only then does it render an opinion to the parties involved. The care that it exercises makes its work slow, but there is no considerable backlog of cases awaiting attention.

It is the hope of the Committee that each grievance can be handled in such a manner that it will not end in litigation, but instead will result in improved understanding between physician and patient. Usually, when this break has been mended, the grievance ceases to exist.

IOWA INDUSTRIAL HEALTH SURVEY, 1957-1958

In this issue of the JOURNAL can be found the results of a questionnaire survey that was conducted a year ago by the ISMS Committee on Industrial Health. Iowa has just entered the ranks of industrial states, and the time has arrived for its physicians to begin protecting factory workers against the hazards common to industrial plants.

The ISMS was one of the organizations that

sponsored, last December, the First Iowa Industrial Health Conference, at the Savery Hotel, in Des Moines, and many of the lectures presented there by authorities on industrial health problems have been published in last month's issue of the JOURNAL and in this one.

IOWA RURAL HEALTH CONFERENCE

Together with the Institute of Agricultural Medicine at S.U.I., the ISMS sponsored the Iowa Rural Health Conference that took place at Iowa City in March. Unfortunately, bad weather and bad roads cut down the attendance this year—the third in which such meetings have been held—but the effort expended in planning and conducting it was well worthwhile. There is a good chance that the National Rural Health Conference can be brought to Iowa sometime within the next few years.

EFFORTS AT IMPROVING AUTOMOTIVE SAFETY

Throughout the past year, the ISMS Committee on Automotive Safety has worked with Mr. Russell Brown, the Iowa Commissioner of Public Safety, in reevaluating the vision testing that is part of the basis for issuing or refusing drivers' licenses. Either two or three members of the Committee participated in each of Mr. Brown's conferences on the subject. It was determined that the present equipment for testing vision is quite adequate and is being well operated by members of the Highway Patrol. The ISMS representatives signified their willingness to participate in a research project designed to check the importance of visual-field testing.

HAWKEYE SCIENCE FAIR

Late in March, the Iowa State Medical Society was a co-sponsor of the first Hawkeye Science Fair, along with Drake University and the DES MOINES REGISTER AND TRIBUNE. The Fair, held at the Veterans Memorial Auditorium in Des Moines, attracted outstanding high school science students from throughout the state, and through the efforts of the tripartite executive committee, 175 of the youngsters exhibited outstanding pieces of their thought and work. The three sponsors had secured trips, scholarships and other prizes for presentation to the participants whose displays were judged best.

PLANS FOR INCREASING THE SUPPLY OF NURSES

During the past year, the ISMS took the lead in surveying nursing education facilities and nursing needs in Iowa. According to the figures that were gathered, Iowa must graduate 75 more nurses per year if it is to reach the national average of 300 nurse graduates per 100,000 population.

In an effort to help Iowa meet its nursing requirements in the next 10 years, the Committee is investigating the possibility of a two-year nurse-training program to be conducted by junior colleges throughout the state. Such an arrangement, it is thought, would attract a "college-minded" young person and prepare her to be a competent, well-motivated nurse for the care of the sick.

THE JOURNAL *Book Shelf*



BOOKS RECEIVED

CIBA FOUNDATION SYMPOSIUM ON THE REGULATION OF CELL METABOLISM, ed. by *G. E. W. Wolstenholme*, O.B.E., M.A., M.B., B.Ch., and *Cecilia M. O'Connor*, B.Sc. (Boston, Little, Brown and Company, 1959. \$9.50).

CIBA FOUNDATION SYMPOSIUM ON CARCINOGENESIS MECHANISMS OF ACTION, ed. by *G. E. W. Wolstenholme*, O.B.E., M.A., M.B., B.Ch., and *Maeve O'Connor*, B.A. (Boston, Little, Brown and Company, 1959. \$9.50).

SYNOPSIS OF TREATMENT OF ANORECTAL DISEASES, by *Stuart T. Ross*, M.D. (St. Louis, The C. V. Mosby Co., 1959. \$6.50).

SURGERY OF THE FOOT, by *Henri L. DuVries*, M.D., with a foreword by *Karl A. Meyer*, M.D., and an introduction by *Edward L. Compere*, M.D. (St. Louis, The C. V. Mosby Co., 1959. \$12.50).

TEXTBOOK OF PEDIATRICS. SEVENTH EDITION, ed. by *Waldo E. Nelson*, M.D. (Philadelphia, W. B. Saunders Company, 1959. \$16.50).

AN ATLAS OF NORMAL RADIOGRAPHIC ANATOMY, SECOND EDITION, by *Isadore Meschan*, M.D., with the assistance of *R. M. F. Farrer-Meschan*, M.D. (Philadelphia, W. B. Saunders Company, 1959. \$16.00).

BOOK REVIEWS

CURRENT THERAPY—1959: LATEST APPROVED METHODS OF TREATMENT FOR THE PRACTICING PHYSICIAN, ed. by *Howard F. Conn*, M.D. (Philadelphia, W. B. Saunders Co., 1959. \$12.00).

The eleventh annual edition of this masterpiece is now in print. This year's format is similar to that of previous years, with descriptions of treatments of common diseases succinctly presented by American authorities. Hundreds of authors participated. Each year, authors are added or subtracted so as to give the book a fresh outlook. When there is a sharp contrast in therapeutic methods, both of the alternatives are outlined. Multiple coverages of the same disease topic are, however, being minimized. This year on the front and back covers normal laboratory values are listed for easy reference, whereas in earlier editions they had been relatively hard to find. Also this year, bolder type has been used to separate topics and subdivisions. This feature facilitates easy reference.

In the new edition, besides the usual fresh new authors, there are a number of innovations which the reviewer considers of value but which could be improved still further. The newer antibiotics, tranquilizers and analgesics are dealt with in paragraphs scattered throughout the text. It would seem that a separate portion of the book could be devoted to the general qualities and indications of groups of these newer drugs, so that we practicing physicians could learn, when a patient is nervous, for example, what type of tranquilizer to use.

In general, however, the book remains a classic, and reflects the hard work of its editor. Each subject is succinctly dealt with, and yet the discussion is admirably complete. As one reads it, he feels that he is being given the "last word."

This book *must* be in every practitioner's office.—*Daniel A. Glomset*, M.D.

THE ANATOMY OF THE NERVOUS SYSTEM, ITS DEVELOPMENT AND FUNCTION, TENTH EDITION, by *Stephen Walter Ranson*, M.D., revised by *Sam Lillard Clark*, M.D. (Philadelphia, W. B. Saunders Company, 1959. \$9.50).

In its tenth edition, Ranson's textbook of neuroanatomy lives up to the high level of its predecessors. The more recent neurophysiologic information has been incorporated into the volume, but the format remains essentially unchanged.

Dr. Ranson, of course, is dead, but Dr. Clark has remained true to the organization, scope and method of the earlier versions. Indeed, thinking it might be interesting to compare the tenth edition with the copy of the fifth edition that I used as a medical student, I found that each has 21 chapter headings. The new has 622 pages and 434 illustrations, whereas the old has 501 pages and 381 illustrations. The increase in size has been necessitated by an increased emphasis on functional considerations.

This text has long been regarded as standard, and properly so. The tenth edition is the same fine textbook, brought up to date.—*John T. Bakody*, M.D.

AIDS TO NEUROLOGY, SECOND EDITION, by *E. A. Blake Pritchard*, M.D. (Baltimore, The Williams & Wilkins Company, 1959. \$4.00).

The British "school" of neurology has long been famed for the excellence of its teaching and the eminence of its practitioners. Dr. Pritchard, a staff member of the National Hospitals for Nervous Diseases, in London, has emphasized the clinical approach to the patient with a neurologic disorder in this present volume. Since many neurologic texts are neuroanatomically and neurophysiologically oriented, this "turn-about" is refreshing.

The peripheral nervous system is dealt with in Section I, and the author includes the cranial nerves and muscular diseases such as muscular dystrophy and myasthenia gravis in his discussion. Section II takes up diseases of the spinal cord. Diseases of the brain and intracranial injuries are covered in Section III. No mention is made of surgical treatment, for Parkinsonism, epilepsy, migraine, narcolepsy and cataplexy are described as organic neuroses. Func-

tional nervous disorders (psychoneuroses) are included in this section.

Section IV deals with the autonomic (vegetative) nervous system. In Section V an attempt is made to correlate anatomy, physiology and symptomatology. An appendix details the clinical examination of nervous activities and contains a brief mention of electroencephalography.

This book is a "pocket" neurology, being one of the "student's aids" series founded in 1876. The present volume is the second edition, a fact that testifies to the favorable acceptance with which the text has met. There are 480 pages, and there are a few charts, but no illustrations. The subject matter is concisely presented, without having been given outline or synopsis form.

Some of the classifications are contrary to accepted American practice, but perhaps a little shock treatment is good for us and in no way do they detract from the worthiness of the book.

This is an adequate, authoritative, concise, pocket-sized reference text for matters neurologic.—*John T. Bakody, M.D.*

NEUROSURGERY: MEDICAL DEPARTMENT UNITED STATES ARMY, SURGERY IN WORLD WAR II, VOL. I, by *Major S. B. Hays*. (Washington, D. C., Government Printing Office, 1958. \$5.00).

This first volume of a projected two-volume series tells the story of neurosurgery in World War II. It deals with administrative problems and the management of head injuries in the U. S. Army.

It is pointed out that the military medical department had no system for handling the large neurosurgical casualty service at the outbreak of the war. The problem was intensified by the scarcity of neurosurgeons in civilian life at that time. The first such specialists to enter the service, moreover, were actually advised to bring their own instruments with them!

The story of the administrative set up is chronicled, along with the tasks of providing equipment, assigning trained personnel and arranging special training courses in neurosurgery.

A supplementary preface by two neurosurgeons, now civilians, is enlightening. They point out that the first definite plans for a history of neurosurgery in World War II were made in March, 1944. In 1946, a more comprehensive prospectus was drawn, and the completed manuscripts were delivered to the Office of the Surgeon General in 1947. Then "military efficiency" moved in, and after 10 years the project was revived in 1956. Hence the present volume.

The book is divided into two parts. Part I vividly portrays the early administrative difficulties, which included the establishment and expansion of Army neurosurgical centers and the training of general surgeons in neurosurgical technics. There is a further description of neurosurgical organization in the Mediterranean and European theaters of operations.

Part II describes the actual management of the head-injury patient and takes up scalp wounds, fractures of the skull, closed head injuries, and penetrating wounds of the brain. Brain abscesses, epilepsy, skull defects and cranioplasty, and speech defects—all aftermaths of missile wounds—are taken up in

separate sub-sections. There is also a section on pathological material.

The appendix contains the outline forms used during the war for a course of instruction in neurosurgery, extracts from an Army manual of therapy, special history and examination forms, and a statistical outline of battle wounds and battle injuries to the head and brain. There are 130 illustrations and 19 tables, along with an index and 460 pages of text.

A volume of this sort is of undeniable historical interest. Further, the distillation of neurosurgical experience of the U. S. Army in World War II cannot help being of great aid to the medical corps of future wars. And this is not to say that the surgical technics described aren't of value in the treatment of civilian injuries. Peacetime traumatic neurosurgery gains from the publication of this volume.

Hospital libraries are urged to secure this series of Army Medical Department volumes. The Army Medical Department is to be congratulated for the preparation and presentation of this fine text, and for others of the series previously and presently available to the medical profession.—*John T. Bakody, M.D.*

GYNECOLOGIC ENDOCRINOLOGY, by *Gardner M. Riley*, Ph.D. (New York, Hoeber-Harper, 1959. \$8.50).

This is an extremely well-written, easily read compilation of all the most modern concepts regarding the endocrinology of the human female. While being concise, Dr. Riley leaves few stones unturned as he examines each phase of the female's hormonal life.

He divides his book into three sections: Endocrine Physiology, Clinical and Diagnostic Procedures, Steroid Hormone Chemistry, and Endocrine Preparations. The clinical section is quite enlightening, for he goes into the normal and abnormal aspects of puberty, menstruation, infertility, pregnancy and menopause. Though not a medical practitioner, the author outlines diagnostic and therapeutic technics that are superb.

This book would be a wise addition to the reference library of any practitioner who uses hormones in the treatment of obstetric and gynecologic disorders.—*Claude H. Koons, M.D.*

EDUCATION FOR NURSING SERVICE ADMINISTRATION, by *Mary Keller Mullane, R.N., Ph.D.* (Battle Creek, Michigan, W. K. Kellogg Foundation, 1959).

The book is well-written and is a follow-up on the results of the Kellogg Foundation Nursing Service Administration Research Project directed by Herman Finer, D.Sc., at the University of Chicago in 1951. It is also a summary description and composite report of the many and varied problems encountered by 14 universities in setting up curricula and formulating objectives for the graduate and undergraduate training of prospective hospital nursing supervisors and nursing service administrators.

Miss Mullane approaches her topic by pointing out the factors that created the need for education in nursing service administration and the steps that were taken in setting up the Research Seminar on Nursing Service Administration in Chicago. Many of the participants were elected representatives of the

14 universities which, it was understood, would set up programs in nursing service supervision and administration with further financial assistance from the Kellogg Foundation. The author seems proud of the fact that all of those universities accorded the same degree of interest and prestige to education for hospital nursing service administration as they did to any other major area of instruction.

She places considerable emphasis on the problems associated with setting up qualifications for faculty, and recruiting and retaining well-prepared faculty members, and she discusses problems associated with student recruitment, curriculum development, field experience and evaluation, and areas in which greater emphasis should have been placed in the course.

She shows how nursing service supervision and administration programs within the 14 universities influenced the American Nurses Association, the National League for Nursing and the American Hospital Association to set up institutes and workshops throughout the nation in the management of hospital nursing services.

I believe this will be a very useful publication for deans of university schools of nursing who have or are about to set up programs in nursing service administration, and also for directors of hospital schools of nursing who are often called upon to counsel senior students and young graduates interested in entering this line of work. It could also be used by students who are in the process of selecting a university at which to major in nursing service administration. Above all, it has contributed to the upgrading of nursing supervision and administration, which includes the application of fundamentals that are basic to good nursing care of the sick in our hospitals.—*Margaret R. Denniston, R.N., Director of Nursing, Iowa-Methodist Hospital, Des Moines.*

NICOTINIC ACID LOWERS BLOOD CHOLESTEROL

Prompt and sustained reduction of blood cholesterol levels has been obtained in hypercholesteremic patients treated with large doses of nicotinic acid, according to Drs. William B. Parsons, Jr., and John H. Flinn, internists, of the Jackson Clinic, Madison, Wisconsin. In a scientific exhibit at the AMA meeting at Atlantic City, they reported that it is an effective and practical agent for the reduction of elevated levels of blood cholesterol, particularly the beta-lipoprotein fraction.

Their study group had included 44 patients and was conducted over a period of 56 weeks. Each was given 3 Gm. of nicotinic acid daily, in divided doses, for a period of 12 weeks, after which the dosage was tailored to meet the response of the individual.

After 30 weeks, nicotinamide was substituted for nicotinic acid. Then, after 12 weeks of nicotinamide, nicotinic-acid therapy was resumed in the form of capsules containing nicotinic acid supplemented with B-complex vitamins. Patients were not under any dietary restrictions, with one exception, during the term of treatment.

The side effects which often occur after ingestion of nicotinic acid (flushing and pruritus) were found to subside within the first week of therapy in nearly all cases, and the investigators observed no serious toxic effects attributable to nicotinic acid.

Significantly, they found that the substitution of nicotinamide in equal dosage after prolonged nicotinic-acid therapy was followed by a prompt return of blood cholesterol to pretreatment levels in every patient. The apparent failure of nicotinamide may provide a clue to the mechanism of action because of the slight chemical differences between the two drugs, they thought.

They stress that study for a much longer period (five to 10 years) will be required to determine whether this form of therapy for hypercholesteremia will prevent or retard the progression of atherosclerosis in human beings as it does in laboratory animals.

WEEPING IN THE DRESS SHOP

Formaldehyde gas liberated from insufficiently polymerized resins used in the process of wrinkle-proofing and waterproofing fabrics has been implicated as a cause of burning and stinging eyes and headaches among employees and patrons of small dress shops in Ohio.

Dr. H. G. Bourne and Mr. S. Seferian, of the Ohio Department of Health, have reported in the May issue of *INDUSTRIAL MEDICINE AND SURGERY** that an investigation of complaints from small dress shops revealed that the air in those establishments contained excessive amounts of formaldehyde gas—not enough to cause illness, but enough to be intensely irritating. Rayon dresses were found to contain from five to eight milligrams of formaldehyde per 10 Gm. sample; a cotton article, 3.4 mg. Wool dresses were free of this irritant substance.

The problem is not unique to Ohio. Similar complaints have been voiced in Detroit, Houston, Philadelphia, Milwaukee and Charlotte, N. C., and garment manufacturers in New Jersey, Pennsylvania, New York and California have sought assistance from their state health agencies in remedying the condition. The irritant effect seems intensified during the spring and early summer when shipments of raincoats, bouffant petticoats and summer rayon and cotton dresses are received, the health officers explained.

"Until such time as the cloth finishing producers are able further to reduce the residual formaldehyde in their product or to discover a less irritating substitute," the authors suggest, "a ventilation rate equivalent of 15 air changes per hour in these establishments should be sufficient during critical seasons."

* Bourne, H. G., Jr., and Seferian, S.: Formaldehyde in wrinkle-proof apparel produces tears for milady. *INDUSTRIAL MEDICINE AND SURGERY*, 28:232-233, (May) 1959.

STATE DEPARTMENT OF HEALTH



COMMISSIONER

DRUGS AND BIOLOGICALS AVAILABLE FROM THE STATE DEPARTMENT OF HEALTH

VENEREAL DISEASE CONTROL

(A) *Procaine penicillin* (aqueous or oil suspension)—600,000 units for gonorrhea cases; 6,000,000 to 12,000,000 units for syphilis cases, depending on the diagnosis. (B) *Achromycin* (250 mg. capsules)—distribution limited to those medically indigent patients in whom penicillin sensitivity has been definitely established.

These drugs are available without cost to physicians for the treatment (control) of reported cases of venereal disease. Physicians should address their requests for these drugs directly to the Venereal Disease Division, Iowa State Department of Health, and case reports must accompany the requests.

SKIN TEST MATERIALS

(A) *Tuberculin*. (1) Old tuberculin is furnished by the Department of Health either for group testing or for physicians' routine office use. Doctors who want supplies sent regularly to their offices may write the State Department of Health, Division of Tuberculosis Control, giving the amount and strength that they wish. This material is furnished in two medium-strength dilutions: 1-100 and 1-200. (2) P.P.D. is furnished by the State Department of Health only for special group programs. It is not provided for physicians' routine office use because the material deteriorates very rapidly after dilution. (B) *Histoplasmin*. These skin-testing reagents are furnished on the request of any physician, regardless of the economic status of the patient.

IMMUNIZING AGENTS

(A) *Triple toxoid* (diphtheria, tetanus and whooping cough). (B) *Diphtheria-tetanus toxoid*. (C) *Typhoid vaccine triple* (typhoid, para-A and para-B). (D) *Poliomyelitis vaccine* (Salk). (E) *Smallpox vaccine*.

This group of immunizing agents is distributed through the usual patterns. It is sent to any physician for any persons who are indigent or whom he deems to be medical-hardship cases. Funds for

the purchase of poliomyelitis vaccine by the State Department of Health come from two sources. Special federal funds made available by Congress in 1955 are earmarked for use only for persons under 20 years of age, and for pregnant women of any age. State funds and other grant funds also available are earmarked for use only in indigent or medical-hardship cases.

The triple toxoid, diphtheria-tetanus toxoid, smallpox and poliomyelitis vaccine will also be sent to counties, towns or cities for school immunization programs provided that the Division of Maternal and Child Health has received a statement that the county medical society in the area concerned has approved the school immunization program and has also approved including any or all of these immunization reagents in the program. Requests for these biologics for school programs should be addressed to the Division of Maternal and Child Health, Iowa State Department of Health.

Typhoid vaccine is ordinarily not used as a part of the school immunization program. In addition to sending it to physicians for use in indigent and medical-hardship cases, the Department will send it, on request, to physicians for any persons who have been or may have been exposed to a known case of typhoid fever or to a known typhoid carrier. Typhoid vaccine is also available for use in "disaster conditions."

RABIES CONTROL

(A) *Rabies vaccine* (brain tissue Pasteur treatment material). (B) *Duck embryo vaccine*, recommended in lieu of brain tissue vaccine especially for persons who have received brain tissue vaccine previously. It should not be used in persons sensitive to egg protein. The usual treatment is 14 doses. (C) *Anti-rabies serum*, limited to use in persons who have been bitten about the face and neck, or who have extensive bites on other parts of the body, and for such of those individuals who can be given the material within three days after receiving the bites. It does not replace anti-rabies vaccine, but serves as an adjunct in certain situations.

These rabies materials are sent directly to physicians who request them, and if the doctor states

that the patient cannot pay for them, he is sent no bill.

DENTAL MATERIALS

Sodium fluoride powder is distributed for topical application to children's teeth. Any dentist may obtain it by addressing his request to the Dental Division of the State Department of Health.

GAMMA GLOBULIN

All gamma globulin received by the State Department of Health comes from the American Red Cross, and that organization allocates it quarterly on a population basis to all states in the United States. The amounts received are very small, and thus the Department doesn't have enough so that it can furnish the material to physicians for routine modification or prevention of cases of red measles. Furthermore, the Department can no longer supply it for community school use for prophylaxis against infectious hepatitis.

The Department can distribute it to physicians *only for indigent or medical-hardship persons* who have been directly exposed to known cases of infectious hepatitis, red measles or German measles. We find that the amounts we receive quarterly are adequate if we restrict distribution in the following manner:

1. For such persons exposed to *measles*, an additional restriction is imposed. The person must be a child under two years of age, or an older child who is suffering from some debilitating condition such as rheumatic fever, diabetes, or enfeeblement from a recent severe illness.

Prophylactic dosage: 0.1 cc. per pound of body weight.

2. Distribution is limited to very close or family contacts of a diagnosed case of *infectious hepatitis*. There are no age restrictions, for we know that the adult is more likely to have a severe case than is a small child.

Dosage: 0.03 cc. per pound of body weight, with maximum dosage 4.0 cc. Thus, an adult weighing 130 lbs. would receive a 4.0 cc. injection. With this dosage, cases will not develop unless they had reached the last stages of incubation when the gamma globulin was given.

3. For persons who have been exposed to *German measles*, distribution is limited to women in the first trimester of pregnancy.

Dosage: 20-30 cc. The majority of competent research reports indicate that doses of less than 20 cc. are likely to be ineffective.

Supplies of gamma globulin are no longer large enough to permit the Department to use the depot distribution system. It does, however, attempt to keep small supplies in its regional health offices. Physicians may procure it either from their regional office or from the main office of the State Department of Health.

No gamma globulin is currently available from the State Department of Health for *poliomyelitis* prophylaxis.

MORBIDITY REPORT FOR MONTH
OF JUNE—1959

Disease	1959 June	1959 May	1958 June	Most Cases Reported From These Counties
Diphtheria	1	0	0	Lee
Scarlet fever	102	293	88	Jefferson, Johnson, Polk
Typhoid fever	1	0	1	Chickasaw
Smallpox	0	0	0	
Measles	659	1,426	2,032	Allamakee, Clay, Hancock, Scott
Whooping cough	18	23	7	Des Moines, Dubuque, Polk
Brucellosis	18	22	10	Clayton, Louisa
Chickenpox	336	423	304	Page, Polk, Pottawattamie, Scott
Meningococcic meningitis	1	1	1	Cerro Gordo
Mumps	225	157	604	Buena Vista, Linn, Page, Polk
Poliomyelitis	43	1	4	Polk
Infectious hepatitis	5	20	6	Fayette
Rabies in animals	10	14	27	Story
Malaria	0	0	0	
Psittacosis	0	0	1	
Q fever	0	0	0	
Tuberculosis	41	26	33	For the state
Syphilis	80	99	101	For the state
Gonorrhea	63	76	50	For the state
Histoplasmosis	0	0	3	
Food intoxication	0	0	0	
Meningitis (type unspecified)	2	0	0	Polk
Diphtheria carrier	0	0	1	
Aseptic meningitis	3	0	0	Polk
Salmonellosis	1	3	4	Polk
Tetanus	0	1	0	
Chancroid	0	0	0	
Encephalitis (type unspecified)	2	1	0	Adams, Crawford
H. influenza meningitis	0	0	0	
Amebiasis	0	0	2	
Shigellosis	0	0	1	
Influenza	1	13	14	Fayette

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Woman's Auxiliary News



OUR PRESIDENT SAYS—

The National Convention of the Auxiliary in Atlantic City was a great success in the opinion of all of us who attended it. I am particularly proud of the fact that two of our delegates, Mrs. J. W. Billingsley and Mrs. R. N. Larimer, attended all of the meetings with me. We were sorry that more weren't able to make the trip, for the meetings were very inspirational, moving swiftly and filled with interesting talks and valuable suggestions. You will be hearing from those delegates in the WOMAN'S AUXILIARY NEWS, reporting their impressions of the Convention.

Many of you will be interested in learning that our TODAY'S HEALTH project has come to an end. Through the years, we have had the satisfaction of contributing to the phenomenal growth of this magazine that helps so greatly in telling organized medicine's story to the public, as well as in disseminating authentic health information. Now it is to stand unaided, competing with other magazines having national circulations. A subscription to TODAY'S HEALTH is to be one of the perquisites of AMA membership, since it is felt that it can thus be certain of being available to patients in *every* doctor's reception room *every* week. There are to be no more half-price subscriptions, except for county medical societies that have made a practice of purchasing the magazine for schools, libraries, etc. Otherwise, mass-production methods will be used to promote and distribute TODAY'S HEALTH, and Auxiliary members will have more time to spend on the others of their important projects.

Our new AMA Auxiliary president, Mrs. Gastineau, is very much concerned about programs for the aging and shut-ins such as we find in our county homes and nursing homes. We were given a great deal of information about the Homemaker Services that have been successfully carried on in other states, often in conjunction with other organizations. We shall try to get this information to you soon. Many helpful suggestions on this type of work were contained in the reports from the various state Auxiliaries.

The seriousness of our legislative position was made clear by Mr. Joseph Stetler, director of the AMA's Law Division, and Dr. G. M. Fister, chairman of the AMA Council on Legislative Activities. They were very sincere in the appreciation they

expressed for the assistance the Auxiliary has given them. They urged that we redouble our efforts to organize Auxiliaries in counties where there still are none, so that we may be able to carry out our legislative work more effectively.

One of the Auxiliary's new projects, Civil Defense, was highlighted by Lt. Col. Simmons, a dynamic speaker. He made many of us sit up straight and listen carefully when he said the entire adult population of the Soviet Union has completed two courses in Civil Defense training, including drills with gas masks. These courses take up approximately 22 hours of work and are now repeated yearly. He felt that our indifference, frustration and defeatism regarding Civil Defense is deplorable, and that we, as doctors' wives, can do much to remedy the situation.

In future issues, I hope to give you some of the highlights from state reports on subjects such as "Lay Day," "We Care for Our Own," and "The Safety Story."

—MRS. E. A. LARSEN

TEEN-AGERS' FUN AT THE ATLANTIC CITY MEETING

Teen-agers' activities were included in the National Auxiliary's convention program for the first time this year, and they promise to become even more important at future meetings. "Coke and platter" parties, bicycling on the Board Walk in the mornings, swimming parties at the various hotel pools, boat trips, and dancing to the music of Lester Lanin's Orchestra, a band that is very popular in the East and is booked solid until some time in 1963, were some of the main events.

The young people had their own registration booth and their own badges for the convention, and it thus was easy for them to get acquainted with one another and to make many new friends from other states.

Then too, the young people had an opportunity at least to see the President of the United States. The largest auditorium in the country was packed, but the hundreds who stood outside were rewarded with a view of President Eisenhower as he left the building and hurried away with his escort.

IOWA PRESIDENT'S REPORT AT AMA AUXILIARY MEETING

Recruitment for paramedical careers is one of the most popular projects undertaken by the Iowa Auxiliary. Many of our county chapters sponsor one or more Future Nurse Clubs, and other groups sponsor career days in high schools and hold recruitment teas to present material and information to young people interested in careers in nursing or allied fields.

One of the highlights of our recruitment program is the annual conference of Future Nurses' Clubs. Representatives of each club and their sponsors are invited to attend a one-day meeting designed to give junior and senior high school students as much general information about various aspects of the nursing profession as possible. Nursing educators, hospital administrators and student nurses participate in the program, and hospital tours are conducted.

The Iowa Auxiliary maintains a health education loan fund which is available to qualified young women in need of financial assistance to obtain a nursing education. This loan fund is supported by a voluntary contribution of fifty cents or more per member, and by memorial gifts. The proceeds of an Auxiliary-sponsored benefit dance held at the time of the annual meeting augment this fund also. Five new loans were granted this year, and a total of 29 girls now have received financial assistance from the Auxiliary for their nursing education.

The Iowa Nursing Careers Committee, of which the Auxiliary is a participating member, sponsored the first state-wide conference of nursing educators and high school career-guidance counselors in April of this year. The objectives of the meeting were to determine what type of information is most needed by guidance personnel and to find ways for improving the dissemination of information regarding nursing education. People who work in the recruitment program felt that information regarding recruitment resources would help to develop a unified front in nurse education. It was a successful meeting and will undoubtedly be only the first of many such conferences.

—MRS. H. C. MERILLAT,
1958-1959 President

LET'S GET DOCTORS TO TAKE THEIR OWN MEDICINE

The Tulsa Woman's Auxiliary wants the members of sister organizations throughout the country to follow its example in getting doctors to "practice what they preach."

Recognizing that physicians usually are the last ones to look after their *own* health, the Tulsa doctors' wives have drawn up a pledge which they call "To Be or Not to Be—Alive." Here is a portion of it:

"THEREFORE be it recorded on this day that the Tulsa Auxiliary wishes to say we think our husbands should pass the test with periodic examinations, just like the rest."

Other Auxiliaries have indicated an interest in copying this excellent suggestion, presented at the AMA Auxiliary Convention in June.

MRS. GASTINEAU OUTLINES THE ROLE OF A PHYSICIAN'S WIFE

Here are some of the ideas that Mrs. Frank Gastineau, the AMA Auxiliary president, gave to reporters on the role of a doctor's wife.

"Once in a while," she says, "a doctor may tell his wife about an unusual case he has seen, but he almost never names the patient. If he does, or if the wife finds out who it is, she refrains from gossiping about it, for if she did, her husband's whole career would be endangered."

As the widow, mother and mother-in-law of physicians, Mrs. Gastineau holds that being a doctor's wife is a profession in itself. Here are some of the things in which such a woman must be proficient:

How to tell when an emergency is really an emergency

How to be both mother and father to her children

How to cook meals that will not be ruined by standing

How to care for a husband who doesn't take care of himself.

She says that patients often call a physician's home in a state of hysteria. "Sometimes it is obvious that there is no real urgency, and if her husband is not at hand, it is his wife's duty to try tactfully to delay the call. But if there is the slightest doubt, she must try to calm the caller and then make every effort to locate the doctor. Some persons are satisfied with a reassuring word from the physician's wife, but a doctor's mate must always refrain from giving any medical advice."

Being both mother and father to the children is what Mrs. Gastineau regards as the most difficult part of being married to a physician. "However," she grants, "unlike many other fathers, doctors usually spend most of their days off with their families."

She says physicians' wives have found casseroles and stews about the most practical dishes in their cookbooks. These, they can serve to the children at mealtime, and still have something appetizing to serve to their husbands, whenever they arrive.

Taking care of their husbands' health is one of the most constant problems for doctors' wives, according to Mrs. Gastineau. Doctors frequently neglect their health, and many go out in all kinds of weather and work long hours for the sake of their patients. Wives must be firm, she says, in

insisting that doctors guard their own health.

She admires the young people of today who marry while the man is still in medical school. "Training is so long today, and therefore the financial strain is so great, it is a wonder they can manage. But they do, and very often with a growing family to support."

Mrs. Gastineau is the widow of the late director of the Department of Dermatology at the Indiana University Medical School.

TWO HIGHLY WORTHWHILE WORKSHOPS

Workshopping seems to have become another "great American institution, like volunteer service clubs and coffee breaks. Among other things, it is a way of using the physical plants of our colleges and universities at a very nominal fee. A great deal of very interesting material is made available to workshoppers, and social activities are provided, too. It is interesting to meet some of the same people at successive workshops, and it is interesting to note the variety of organizations that the workshoppers represent: Iowa Farm Bureau, American Legion Auxiliary, Iowa Congress of Parents and Teachers, Association of American University Women, State Department of Public Instruction, Iowa School Board Association, newspaper editors, superintendents of schools, Iowa Manufacturers Association, Iowa Dairy Council, and commercial firms such as Viking Pump and Deere & Co., to mention just a few.

This seems to be a very significant trend—emphasis on education of all kinds for more people, in this great industrial awakening our state is experiencing.

The group at Drake in June was workshopping on health education in our schools. Dr. Wesley, of the AMA headquarters in Chicago, was one of the principal speakers, and we could be proud both of her presentation of the work of physicians in the United States and the excellent teaching methods and devices she suggested for health instruction in our public schools. She will make two more trips into Iowa this year, and we hope she will be able to attend one of our State Auxiliary board meetings, for she has important things to say and certainly can strike a spark of enthusiasm in everyone who hears her.

The Public Relations Workshop on the American High School of Today, held in Cedar Falls, was likewise outstanding. The Conant Report was used as a yardstick for measuring the efficiency of our own high schools. Dr. James B. Conant, the author of the report, has had three careers, as a

scientist (chemistry), as president of Harvard University and as ambassador to West Germany. Yet it is in connection with his investigation of American public schools that he has become most widely known, and he has come to be identified with the idea that we may be losing our scientific leadership, and hence our freedom, by default.

Dr. Conant feels that the most logical place to attempt strengthening our educational system is in the high schools. The Ford Foundation financed him, and he personally visited 77 schools throughout this country. Though he had been of the opposite opinion when he started out, he concluded that our school system is sound, but that we need to do a great deal of upgrading of curricula in order to give marketable vocations to the greater share of students, who will not be attending college, and in order to provide greater incentive and competition for the 15 per cent who intend going on to college. The principal way in which he thinks our high schools can be strengthened is by combining the smaller ones of them so that no high school has an enrollment under 300.

You will be hearing more of the Conant Report in most of your communities. Our Auxiliary's theme for 1959 and 1960 is "Individual Responsibility for Better Community Health." That includes mental health. A close scrutiny of the Conant Report will help to show us how to help the schools improve their health-education courses.

DON'T COAX GUESTS TO DRINK!

A hostess should never coax her guests to drink alcohol. It is important for her to realize that a certain unknown percentage of her guests face the problem of alcoholism, Dr. Marvin A. Block, of Buffalo, told a session of the AMA Auxiliary's Convention in Atlantic City last June.

The choice of accepting a drink must lie with the guest, he said. One of the ways the hostess can help her guests make this decision freely is always to have plenty of fruit juices and other non-alcoholic beverages on hand.

"Alcoholism is but one manifestation of a tremendous health problem," Dr. Block said, and he added that it "is an attempt to escape reality by the use of a socially accepted drug." Doctors' wives should be on the alert to help alcoholics or near-alcoholics adjust to their problems without resorting to this crutch, he declared.

Though well-adjusted people may drink without fear of addiction, many who drink excessively are not aware of their own maladjustments, the speaker explained.

WOMAN'S AUXILIARY TO THE IOWA STATE MEDICAL SOCIETY

President—Mrs. E. A. Larsen, 323 Oak Street, Centerville
President-Elect—Mrs. R. F. Nielsen, 919 Washington Street, Cedar Falls

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Editor of THE NEWS—Mrs. H. C. Merillat, 116 Lincoln Place Drive, Des Moines 12

Court Appearances Can Be Pleasant

LLOYD KARR, ATTORNEY AT LAW

WEBSTER CITY

DURING THE LAST several years, the subject of medical testimony has attracted the attention and serious consideration of both the medical and legal professions at national, state and local levels. In addition, joint meetings of doctors and lawyers have been held at which both groups have been provided with needed information, and an improved understanding has been achieved.

In selecting a title for this discussion, I gave serious consideration to the question of whether the role of a medical witness *can* be a pleasant one. It is entirely possible that the title I have chosen has evoked a chuckle from some of you, but I am nevertheless confident that it is justified.

THE DOCTOR APPEARS IN A MOST FAVORABLE LIGHT

There are some significant problems connected with medicine and law that are not entirely obvious to the casual observer, and both our professions are somewhat handicapped by being unable to go into the market place, so to speak, and tell the public of the difficulties we have encountered and the solutions that we have found for them. Thus, I think, we should welcome the rare occasions when we can speak altogether ethically in our own behalf. Physicians, in particular, should regard court appearances as opportunities to show the general public something of the services they render to their fellow citizens and the efforts they put forth in their behalf.

You may question just how much your appearance in a court room will demonstrate the value of your profession to the public, but if you will give the matter a moment of consideration, I am sure you will realize that the situation is one that is sure to benefit both you and your colleagues. A medical witness occupies a position in the eyes of the Court, the lawyers and the jury which few other witnesses can share. As you come in, the idea is firmly implanted in everyone's mind that you are qualified to testify upon medical matters, that you are appearing as a friend of the Court, and that as such you have no personal interest in the matters involved. What finer endorsement could you have?

With your battle already half won, your telling what you know about the medical facts in the case at issue should be simple and pleasant.

Yet there are some doctors who are quite apprehensive about the possibility of their being called as witnesses, and it is with them in mind that I shall offer a few simple suggestions that may be of help in easing the role of the physician in a trial.

You are, in a sense, a judge of the medical facts.

It is upon your testimony that the Court and jury must rely for information as to the medical situation of the party involved in the suit. So as to maintain the high regard in which you are held, you should above all things avoid any suggestion that you are taking sides in the controversy. You should be impartial in the cooperation you give to the lawyers. You should give your considered opinion without regard to which litigant may have employed you. Your loyalty to a patient who happens to be involved in a case should never go so far as to permit you to shade or color your testimony in any degree.

You accomplish two things when you adopt and maintain this attitude. You retain and enhance the respect of all the people in the courtroom, and you avoid the resentment which might result if, as a witness, you tried too hard to help one side or the other.

YOUR REPORT MAY BRING A SETTLEMENT OUT-OF-COURT

To make your court appearances pleasant, there is much that you can accomplish outside the courtroom. The initial step in that direction is to give a full and complete report on your patient to the lawyer upon his first request, including your opinion and conclusions regarding all phases of the case, always remembering that an item of considerable importance is the permanence of the patient's disability, or the lack of the same.

A full and complete report may accomplish two objectives. First, it informs the lawyer of the complete medical condition of the patient, and second, it may result in the abandonment or settlement of the case, sparing you the necessity of appearing as a witness.

As Mr. C. Joseph Stetler, director of the Law Department of the American Medical Association, pointed out in his "Workshop Report," your initial report might well include the following:

1. Identification of the patient involved.
2. A description of the first aid given, by whom and where it was administered, and the extent of the injuries.
3. A full report on the examination of the patient and the findings.
4. The tests performed, such as visual examination, x-ray and laboratory studies, and others.
5. The names and types of consultants utilized, and the names of any of your associates who may have cared for the patient during your temporary absence.
6. The patient's prognosis.
7. The actual or estimated medical bill.

8. An estimate of the injuries in regard to permanent or temporary disability.

If your report does not achieve your goal of getting the case disposed of without trial, and if you are required to testify, there are several important factors that you should consider.

In getting in touch with you regarding your appearance as a witness, most lawyers will recognize the pressure of your schedule and will place themselves at your disposal as far as an appointment for a pre-trial interview is concerned. If a lawyer requests your appearance without also requesting a preliminary conference, you are entirely within your rights if you insist that a conference be held well ahead of the time for your appearance.

THE PRE-TRIAL CONFERENCE IS HIGHLY IMPORTANT

Several things can result from such a preliminary conference. It will afford you an opportunity to get better acquainted with the lawyer who is going to examine you, and him with you. It will permit you to explain in detail what your testimony will be, and it will permit the lawyer to acquire a knowledge of how best to interrogate you when you appear as a witness. Then, too, this conference may develop facts previously unknown to the lawyer that may result in the settlement of the case.

The doctor who appears as a witness without having the benefit of such a conference with the lawyer is inviting difficulty for himself. It is important that at the preliminary conference you reveal clearly what you will say. Do not hesitate to discuss the situation fully in response to any questions the lawyer asks, but in following such lines of discussion, be careful to leave no doubt in the lawyer's mind as to what your definite answers will be.

Of course there are many medical questions to which definite answers cannot be given. But the lawyer should be informed of the situation and told what you can and cannot answer.

ARRANGE FOR YOUR FEES

Another matter of great importance in the field of interprofessional relations should be determined at this conference—the doctor's fee for the services he is to perform as a witness. All lawyers recognize that a physician is entitled to a fee commensurate with the importance of the services rendered and equivalent to the earnings of which his enforced absence from his office may deprive him. The unfortunate situation is that sometimes the matter is not discussed and agreed upon at the outset, and at the conclusion of the case a large statement is presented to the lawyer for payment. Please advise the lawyer in the beginning as to what your fee will be, when you expect it to be paid, and by whom.

When I started preparing this paper, I gave

serious consideration to the question of what fee is proper for a medical witness. I knew, of course, that it is extremely difficult to determine any standard for such charges, but I had no idea that it is nearly impossible to obtain any reliable criteria on the matter. My inquiries to both the American Medical Association and the American Bar Association brought me some fine statements of general principles, but the special committees of those organizations had nothing else to offer.

Consequently, what I shall have to say about fees is tendered without any semblance of authority. Instead, it is merely a set of suggestions for your consideration.

It is recognized that there is a basic difference between the roles of the attending physician and the expert who is called in to testify. The attending physician has some responsibility to the patient to "see him through" to the end of his problem. I am happy to say that in my 20 or more years of practice, I have yet to request the help of an attending physician and be refused. In each instance, he has offered me full help and advice in handling the case.

It might appear that the amount to be charged by the attending physician for appearing as a witness should be governed by the same considerations you use in determining the charge to be made for your professional services when no litigation is involved—the time required, the knowledge and skill required, the financial condition of the patient and the results achieved.

The role of the so-called expert should be paid for on a somewhat different basis. He has received no previous compensation. His opinion has been solicited in a specialized field on a one-time basis. Thus, in my opinion, he is entitled to charge more than is the ordinary attending physician.

In determining the amount of the fee to be charged, it might appear that the medical witness should consider the question of the possible reactions of the parties involved to the size of the fee. The amount decided upon should always be in the nature of compensation, rather than a reward for helping the parties involved.

One suggestion along the lines of public relations that I might offer in this regard is that the subject of fees for medical witnesses might be a proper matter for consideration by the various local medical associations. To consider it on a state-wide basis would afford little help. The situations over the state—even in a somewhat rural state such as Iowa—vary to such an extent that any one standard of fees would be impractical. On a county basis, however, a general suggested fee schedule might be determined so that the legal profession would know, within certain limits, what might be expected as a charge for a physician's services as a medical witness.

In any event, whatever fee is to be charged in a particular instance, be certain that it is agreed

upon at the outset of the proceedings, and not left for discussion after the services have been performed.

THE DOCTOR'S APPEARANCE CAN BE SCHEDULED

Continuing, then, with my suggestions for making your appearances in the courtroom pleasant, I come to the matter of timing them to suit your convenience and that of the Court. In the presentation of a lawsuit, it is desirable to follow a logical and normal order of events, using the various witnesses at times that will facilitate the recounting of events as they actually transpired. Thus, the medical witness is usually required to appear at a specific time, and if it is at all possible for him to arrange his work in order to appear at the time specified, his doing so will be greatly appreciated by everyone involved in the trial.

However, everyone recognizes that all of us are subject to emergency demands. When the lawyer contacts you for the purpose of setting a specific time for your appearance, he usually is able to give you a choice of two different days, and should be able to permit you to appear at almost any hour of either day.

It would be entirely proper for you, when the lawyer calls, to find out what time and day he would like you to appear, and if you are committed for that time, to suggest that it would be much more convenient for you if he could arrange for your appearance at some other specific hour. Also, if you express a wish to be put on the stand promptly at the hour specified, there is no reason why you cannot be accommodated. In the trial of a case, you will usually find that the judge is very friendly toward you, and for the purpose of permitting you to testify will permit a lawyer to interrupt the testimony of another witness.

All of these possibilities presuppose the existence of good relations between the doctor and the lawyer. If these do not exist, what I have said about the pleasantness of your court appearance has no value. The relationship is one at which both professions must work, and the greatest single factor in achieving and maintaining good relations is an increase in the number of joint meetings between lawyers and doctors.

When you make your appearance in court, be certain you are prepared by bringing with you all of your office records both medical and financial, the hospital records and the x-rays. Frequently, the testimony of a medical witness has had to be interrupted so that the doctor could go to his office to secure the necessary records.

Promptness is an important matter. Some judges dislike having to call a recess because a witness has failed to appear after arrangements have been made for him to testify at a given time. Again, however, emergencies alter all circumstances, yet if you are going to be delayed, a call by your secretary will certainly take care of the situation,

for other witnesses can then take your place in the order of trial.

In a lawsuit, the ultimate goal is to ascertain the facts that are pertinent to the case. There is one guiding precept by which this can be accomplished in the shortest possible manner. James A. Dooley, an attorney who has written extensively on the subject, says: "Whenever anyone undertakes to discuss any phase of a trial, it must be borne in mind that the great goal is simplicity. The surest avenue to this end is simplicity of language. The reasons are obvious. The jurors come to the trial without previous knowledge of the case or its subject matter. They are not skilled in any particular science. Then, too, they have but a passing encounter with the evidence. Thus that encounter *must have meaning*."

USE COMMON PHRASEOLOGY WHENEVER POSSIBLE

"In the examination of a doctor, the theme of simplicity can not be overstressed. Doctors are undertaking to explain conditions with which ordinary laymen are not familiar. Doctors are in court to relate why a condition of ill-being exists, the nature of that condition of ill-being, how it is associated with the occurrence, and its full significance to the particular individual."

As regards the use of medical terms by the expert witness, there is some disagreement between the advice given by your AMA Law Department director, on the one hand, and most of the members of the Bar of this state, on the other. Mr. Stetler advises the medical witness first to use medical terms to describe the facts, and then to explain those medical terms. On the contrary, most Iowa lawyers feel that such a procedure does a disservice both to the medical witness and to the parties involved in the suit. When a medical witness gives his testimony in technical medical terms, there is a certain amount of resentment built up in the minds of the laymen who compose the jury, for they are unable to understand his words. Then, when the lawyer is forced to ask the doctor to explain what he has said, the feeling is established in the mind of the average juror that the witness is trying to minimize the intelligence of his listeners, and the antagonism is aggravated. Even more important to the doctor testifying is the fact that by using the medical terms he doubles his time on the witness stand, for he must take additional minutes to explain the meanings of the medical terms he has used.

In addition, there is a certain additional respect that accrues to the medical witness who talks in the layman's language, by reason of the fact that everyone is able to understand him. Remember, always, that you need not try to impress the jury. They are already sold on your knowledge and importance. Your only concern should be to "deliver the goods" so that the jurors can see and understand what they are buying.

The strategy of testimony can be divided into two general classifications, as far as the witness is concerned—direct examination and cross examination. Strange as it may seem, there have been occasions when the direct examination has been far more difficult than the cross examination. The doctor has a right to expect that the examiner will be friendly on direct examination and will do everything proper to protect him from improper questions on cross examination. But if the direct examiner is unprepared, if the preliminary conference previously mentioned has not been held, if the facts haven't been fully covered at that meeting, or if the examiner is inexperienced, the doctor may be kept on the stand much longer than otherwise.

If you should get into a situation in which the attorney who called you to testify fails for any reason to protect you on cross examination, and you feel that the cross examination has been unfair, always remember that you can discuss the matter with the judge and state your feelings in the matter.

Regardless of the situation, it is unwise for a medical witness to attempt to help the examiner, or to volunteer information not called for in the question that has been asked.

ANSWER CAREFULLY, AND KEEP YOUR TEMPER

Always follow the examiner's questions. Never try to lead him by your answers. If you try to get ahead of him, he may not be able to follow you, and the testimony will be subject to objection, or quite possibly you will have to go back and start your testimony over again.

On direct examination, you should be careful not to extend yourself into any field in which you have to guess or on which you are not qualified to testify. Some witnesses are inclined to become talkative, and to discuss the problem in general terms, thus extending themselves farther than they intended. They thus become vulnerable to devastating cross examination.

There is a time for testifying as to the facts that you observed and the treatment that you administered. There is also a time for you to express your opinion based on those facts and on your knowledge and experience. You should never try to mix the two. When you are asked for your opinion, the question will be properly labeled.

There is another field of opinion testimony—one that is usually reserved for the expert witness, but is frequently used also in examining the attending physician. That is the hypothetical question. It is entirely possible that many facts that have been placed in the record of the case by other witnesses will be used as the basis for a hypothetical question. Therefore, it is important that when the examiner begins his hypothetical question with the words "Doctor, assuming that . . .," you divest your mind completely of everything you know about the case, and base your answer entirely

upon the elements detailed in the question. You are limited in your answer to the elements and facts stated in the question, and may not call upon any other facts that you know about the case.

In considering cross examination, a well-prepared witness who testifies carefully need have no fear. The finest cross examiner will be unable to confuse the witness or destroy his testimony. In fact, a cross examiner can easily damage his own case if he uses tactics which lead him into a blank wall when the witness maintains his original position.

There are several approaches to cross examination. One lawyer may try to embarrass the witness and divert his thinking from the subject of his examination by charging at him with a question as to whether or not he is being paid by the other lawyer to testify. This should in no way disconcert the witness. He should answer frankly that he is being paid, and if he is asked how much and is permitted to answer, the witness should state the accurate amount of the fee. A doctor need offer no excuse for being paid for his services. Frequently, if a substantial fee is charged and if this matter is brought out on cross examination, the amount of the fee enhances the standing of the witness in the eyes of the jury.

Many times, a witness has been frightened by a question about his fee, or by a question as to whether or not he has discussed his testimony with the other lawyer. The doctor should answer promptly that he has discussed the case with the other lawyer, if indeed he has done so. It is both proper and desirable.

Another favorite device that some cross examiners use, when the doctor's testimony has been particularly damaging and there is no way of refuting it, is to ask the doctor a long list of either unrelated or semi-related questions, to all of which the doctor will have to answer in the affirmative. If you encounter such a tactic, you should not try to point out that the lawyer is off base or that the information elicited is not applicable to the facts. You should answer each question accurately. The purpose of such an examination is to enable the lawyer to argue to the jury that you have agreed with practically everything he asked you on cross examination. It is the function of the other counsel either to object to the questions or to point out to the jury the inapplicability of such questions and answers.

Frequently, in cross examination, a doctor may encounter a lawyer who phrases a multiple question and then insists upon receiving a "yes" or "no" answer. If it is impossible to give such an answer, you should merely state that you are unable to give a "yes" or "no" answer to that question.

You may be asked a question that is so poorly worded as to be unintelligible. If that happens, merely state that fact to the Court or the lawyer in a friendly manner, and the question will be rephrased.

Above all, never allow yourself to be led into an argument with the cross examiner. A witness who loses his temper is lost. If you know the information about which you testify, if you answer the questions quietly and briefly, and if you never lose your composure, you can control the best cross examiner.

On one occasion in preparing for the trial of a case, we warned our client that the opposing counsel was noted for his bombastic and intimidating conduct in cross examination. The client was told what to expect, and was instructed to answer every question courteously, regardless of the attitude of the attorney. He did as he had been instructed, and at the conclusion of the cross examination, the attorney was exhausted, had made no progress, and our client was still in control of the situation.

As a physician, you possess an advantage which few witnesses have in that you are testifying in your own field, where you have superior knowledge. This always works to your great advantage.

Another important factor: Never be embarrassed to admit that you do not know the answer to a question. It is only if you attempt to bluff that you endanger your position.

CONCLUSION

In closing, I should like to say that I would be the last to try to convince you that testifying in a

courtroom is preferable to ministering to your patients in your office, in a hospital or in their homes. I have testified as a witness on several occasions, and I know that there is a vast difference between asking the questions and answering them. These suggestions have been offered with the hope that they may be of some value in making your court appearances more pleasant for you and more effective in the trial of cases at Bar.

If we can but keep in mind that any one of us may at some time be a plaintiff or a defendant in the trial of a case and in need of testimony on our behalf by witnesses who have specialized knowledge of the subject matter involved, we shall be better able to realize the importance of the attendance of every important witness in the trial of a case.

Finally, I should like to urge your participation in every medical-legal meeting that you may have an opportunity to attend. Through increased association, doctors and lawyers can develop a better acquaintanceship that will result in the increased competence of both in the field of medical testimony.

With mounting pressures on both our professions for a change in the manner of practice, these two highest professions in our society should join hands in protecting the American Way of Life by together performing greater service to humanity!

Coming Meetings

In State

Sept. 10-11	Diseases Common to Animals and Man. SUI College of Medicine, Iowa City
Sept. 16	Eighth Annual Fall Conference, Page County Medical Society. Clarinda
Sept. 16-17	Pediatrics. SUI College of Medicine, Iowa City
Sept. 23	Mercy Hospital Dedication Program (see P. 407 in July Journal). Mercy Hospital and Hotel Savery, Des Moines
Sept. 25	Iowa Conference on Children & Youth. State House, Des Moines
Sept. 25-26	Urology. SUI College of Medicine, Iowa City
Sept. 27-29	Iowa Academy of General Practice. Savery Hotel, Des Moines
Oct. 17-18	Iowa-Nebraska Neuropsychiatric Conference. SUI, Iowa City
Oct. 30-31	Radiology (Postgraduate Conference). SUI, Iowa City

Out of State

Sept. 1-2	Sports Medicine Congress. Chicago Campus, Northwestern University, Chicago
Sept. 2	Annual Meeting, American Institute of Ultrasonics in Medicine. Leamington Hotel, Minneapolis
Sept. 2-4	Fourth European Congress of Allergy. London, England
Sept. 3-5	International Congress of Nephrology. Geneva, Switzerland and Evian, France
Sept. 3-5	District Meeting, American College of Obstetricians & Gynecologists. Equinox House, Manchester, Vermont
Sept. 3-8	Pediatrics (University of Colorado Medical Center). Estes Park

Sept. 6	College of American Pathologists. Palmer House, Chicago
Sept. 6-9	Fifth European Symposium on Poliomyelitis. Munich, Germany
Sept. 6-12	World Congress for Physical Therapy. Paris, France
Sept. 7-11	American Society of Clinical Pathologists. Palmer House, Chicago
Sept. 7-12	Seventh Congress, European Society of Haematology. Bedford College, London, England
Sept. 7-12	Thirteenth Assembly, World Medical Association. Montreal, Canada
Sept. 8-11	Combined Annual Session, Colorado State Medical Society and the Biennial Rocky Mountain Medical Conference. Brown Palace and Shirley-Savoy Hotels, Denver
Sept. 9-10	International Congress on Air Pollution. New York City
Sept. 10-12	American Association of Obstetricians & Gynecologists. The Homestead, Hot Springs, Virginia
Sept. 10-12	Oregon Academy of General Practice. Portland
Sept. 10-12	St. John's Hospital Postgraduate Assembly. St. John's Hospital, Santa Monica
Sept. 10-21	Eleventh Western Institute on Epilepsy (Variety Club of Wisconsin, The Wisconsin Epilepsy League and Mount Sinai Hospital of Milwaukee). Kaiser-Knickerbocker Hotel, Milwaukee
Sept. 11-12	Northern Minnesota Medical Association
Sept. 11-18	International Tuberculosis Conference. Istanbul, Turkey
Sept. 12-13	First International Symposium on Anti-Infectious and Antimitotic Chemotherapy. Geneva, Switzerland
Sept. 12-16	Internal Medicine. University of California, San Francisco
Sept. 13-15	Medical Progress Assembly. Tutwiler Hotel, Birmingham, Alabama

- Sept. 13-16 **Annual Meeting, Washington State Medical Association.** Olympic Hotel, Seattle
- Sept. 13-17 **Twenty-fourth Annual Congress, International College of Surgeons, North American Federation.** Palmer House, Chicago
- Sept. 14-18 **Board of Internal Medicine Review Course (For Part I applicants).** Cook County Graduate School of Medicine, Chicago
- Sept. 14-25 **Gastroscopy & Gastroenterology.** Cook County Graduate School of Medicine, Chicago
- Sept. 14-25 **General & Surgical Obstetrics.** Cook County Graduate School of Medicine, Chicago
- Sept. 14-26 **Postgraduate Course in Anesthesiology.** McGill University, Montreal
- Sept. 14-Nov. 6 **Occupational Medicine.** New York University Postgraduate Medical School, New York City
- Sept. 16-17 **Twenty-fourth Piedmont Postgraduate Clinical Assembly.** Clemson House, Clemson, South Carolina
- Sept. 16-18 **Utah State Medical Association.** Hotel Utah Motor Lodge, Salt Lake City
- Sept. 17-19 **Montana Medical Association.** Finlen Hotel, Butte
- Sept. 17-19 **Obstetrical Complications.** University of California, San Francisco
- Sept. 17-19 **Second Annual Conference, New England Society of Anesthesiologists.** Equinox House, Manchester-in-the-Mountains, Vermont
- Sept. 18 **Fall Scientific Session, Louisiana Chapter of the American Academy of Pediatrics, "Malignancies in Childhood" (Lederle Laboratories).** Capitol House, Baton Rouge
- Sept. 18 **Semi-annual Meeting, Medical & Chirurgical Faculty of the State of Maryland.** Ocean City
- Sept. 18-19 **North Pacific Society of Internal Medicine.** Victoria, B. C.
- Sept. 18-19 **Common Problems of the Foot.** Stanford University, San Francisco
- Sept. 18-20 **Practical Diagnosis & Management of Cardiovascular Diseases.** University of Southern California, Los Angeles
- Sept. 18-20 **International Cardiovascular Society.** Munich, Germany
- Sept. 18-20 **Mid-Continent Psychiatric Association.** Holiday Inn Motor Hotel, St. Louis County, Missouri
- Sept. 18-21 **European Congress on Rheumatism.** Istanbul, Turkey
- Sept. 18-26 **Annual Otolaryngologic Assembly.** University of Illinois College of Medicine, Chicago
- Sept. 19 **Santa Barbara County Heart Association Symposium on Cardiovascular Diseases.** Biltmore Hotel, Santa Barbara
- Sept. 19-26 **American College of Gastroenterology.** Biltmore Hotel, Los Angeles
- Sept. 21-24 **Congress of International Union of Railway Medical Services.** Lucerne, Switzerland
- Sept. 21-24 **International Union of the Medical Press.** Cologne, Germany
- Sept. 21-25 **Surgery of the Colon & Rectum.** Cook County Graduate School of Medicine, Chicago
- Sept. 21-Oct. 2 **Clinical Uses of Radioisotopes.** Cook County Graduate School of Medicine, Chicago
- Sept. 21-Oct. 2 **Intensive Review of Internal Medicine.** University of Southern California, Los Angeles
- Sept. 21-Oct. 2 **Surgical Technic.** Cook County Graduate School of Medicine, Chicago
- Sept. 21-Oct. 3 **International Congress of Cancer Cytology.** Madrid, Spain
- Sept. 21-Oct. 3 **International Congress of the International Cardiovascular Society.** Munich, Germany
- Sept. 22-23 **Fall Refresher, Minnesota Academy of General Practice.** Radisson Hotel, Minneapolis
- Sept. 22-Nov. 3 **San Francisco Academy of General Practice Fort Miley Surgical Clinics & Symposia.** Fort Miley Veterans Administration Hospital, San Francisco
- Sept. 22-24 **Kentucky State Medical Association.** Columbia Auditorium, Louisville
- Sept. 22-24 **Pediatrics for Pediatricians.** University of Minnesota, Minneapolis
- Sept. 22-25 **American Roentgen Ray Society.** Netherland Hilton Hotel, Cincinnati
- Sept. 23 **American Group Psychotherapy Association First Western Institute.** Olympic Western Hotel, Seattle
- Sept. 23-25 **Annual Meeting, Oregon State Medical Society.** Medford Hotel, Medford
- Sept. 24-26 **American Association for the Surgery of Trauma.** Mount Washington Hotel, Bretton Woods, N. H.
- Sept. 24-26 **American Association of Medical Clinics.** Sheraton-Blackstone Hotel, Chicago
- Sept. 24-26 **Annual Course in Gastroenterology, American College of Gastroenterology.** The Biltmore, Los Angeles
- Sept. 24-26 **Central Association of Obstetricians & Gynecologists.** Drake Hotel, Chicago
- Sept. 25 **Third Annual AAGP Symposium on Infectious Diseases.** Battenfeld Auditorium, University of Kansas Medical Center, Kansas City, Kansas
- Sept. 25-26 **Physical Medicine.** University of California, San Francisco
- Sept. 26 **Hypertension.** Stanford University, San Francisco
- Sept. 28-29 **Tennessee Section, International College of Surgeons, U. S. Section in conjunction with the Tennessee Valley Medical Assembly.** Chattanooga
- Sept. 28-30 **Advanced Electrocardiology.** University of Nebraska College of Medicine, Omaha
- Sept. 28-Oct. 2 **Forty-fifth Annual Clinical Congress, American College of Surgeons.** The Traymore Hotel, Atlantic City
- Sept. 28-Oct. 2 **Internal Medicine (American College of Physicians).** Georgetown University School of Medicine, Washington, D. C.
- Sept. 28-29, Oct. 1-3 **Michigan State Medical Society.** Pantlind Hotel, Grand Rapids
- Sept. 28-Oct. 9 **Office & Operative Gynecology.** Cook County Graduate School of Medicine, Chicago
- Sept. 29-Oct. 1 **Twenty-fourth Annual Meeting, Mississippi Valley Medical Society.** Chase Hotel, St. Louis
- Sept. 30-Oct. 2 **Twenty-ninth Annual Postgraduate Symposium on Heart Disease, San Francisco Heart Association.** St. Francis Hotel, San Francisco
- Oct. 1 **Third Annual Symposium on Diabetes Mellitus (Chicago Diabetes Association).** Thorne Hall, Northwestern University, Chicago
- Oct. 1-3 **Nebraska Heart Association's Scientific Conference.** Blackstone Hotel, Omaha
- Oct. 1-4 **Joint Convention, New Hampshire Medical Society & Vermont Medical Society.** Equinox House, Manchester, Vermont
- Oct. 2-3 **American Medical Writers' Association.** Chase Hotel, St. Louis
- Oct. 2-3 **Eighteenth Annual Meeting, Western Industrial Medical Association, combined with Third Western Industrial Health Conference.** Statler Hotel, Los Angeles
- Oct. 2-4 **Annual Meeting, California Society of Internal Medicine.** Miramar Hotel, Santa Barbara
- Oct. 3-8 **American Academy of Pediatrics.** Palmer House, Chicago
- Oct. 4-5 **Medical Society of Virginia.** Hotel Roanoke, Roanoke
- Oct. 4-6 **Southern Psychiatric Association.** Sheraton-Dallas Hotel, Dallas
- Oct. 5-6 **San Diego County Heart Association, Ninth Annual Symposium on Heart Disease.** El Cortez Hotel, San Diego
- Oct. 5-7 **Obstetrics for General Physicians.** University of Minnesota, Minneapolis
- Oct. 5-7 **Internal Medicine (American College of Physicians, University of Buffalo School of Medicine).** Buffalo General Hospital, Buffalo
- Oct. 5-9 **American Society of Anesthesiologists, Inc.** Americana Hotel, Bal Harbour, Florida
- Oct. 5-9 **Fourteenth Annual Course, Clinical Cardiopulmonary Physiology.** Edgewater Beach Hotel, Chicago
- Oct. 5-9 **Third Annual Postgraduate Week, New York Academy of Medicine, "Research Contributions to Clinical Practice."** New York City
- Oct. 5-16 **Board of Surgery Review Course, Part I.** Cook County Graduate School of Medicine, Chicago
- Oct. 5-16 **Electrocardiography.** Cook County Graduate School of Medicine, Chicago
- Oct. 6-9 **Indiana State Medical Association.** Murat Temple, Indianapolis
- Oct. 7-8 **Twenty-ninth Annual Professional Symposium, Los Angeles County Heart Association.** Beverly-Hilton Hotel, Beverly Hills

(Continued on page lxvii)

Recent Advances in Diseases of the Small Intestine

Regional Enteritis, Non-Specific Ulcers, And Tumors Including Carcinoid and Peutz-Jeghers Syndromes

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DISEASES OF THE SMALL intestine offer a real challenge in diagnosis and treatment. Except for duodenal ulcers, these diseases are not common. Diverticula may be seen occasionally on roentgenologic examination, but generally they are asymptomatic. Recently, a syndrome consisting of multiple large diverticula, macrocytic anemia and, in some instances, steatorrhea has been described.¹ The anemia apparently is due to impaired absorption of vitamin B₁₂ owing to bacterial interference, and it may be treated by parenteral administration of vitamin B₁₂. Intestinal malabsorption or sprue syndromes, especially nontropical sprue, have been studied extensively in the last few years with definite advances in our understanding and treatment of these disorders.² Since it would be cumbersome to consider all aspects of every disease of the small bowel, only certain ones have been selected for this discussion.

PATHOPHYSIOLOGIC ASPECTS AND DIAGNOSIS

The principal functions of the small intestine are motility, secretion, digestion and absorption. These activities are intimately coordinated by nervous and humoral mechanisms, so that a disturbance of one generally alters the others. Symptoms of disease of the small intestine may be ascribed to

disturbances of motility, defective secretion or absorption, local tissue reactions or a combination of these factors.

Symptoms of motor dysfunction include diarrhea, constipation, nausea, vomiting, distention or pain, and are often associated with some degree of obstruction. Pain may be colicky or steady, sharp or dull, and it is usually located periumbilically. Defective absorption may produce a malabsorption syndrome or nutritional deficiency, with loss of weight, steatorrhea and related changes. Tissue reactions may produce tenderness, hemorrhage, fever, or symptoms of perforation or of peritonitis. Hemorrhage may be occult or gross. The latter is usually in the form of dark blood or tarry stools, but there may be red blood in the feces in the presence of hypermotility. Azotemia is more likely to accompany bleeding from the small intestine than from the colon.

The difficulties in diagnosis are increased because the small intestine is a tube more than 20 feet long which is loosely held in place by its mesentery. Symptoms are often non-specific and may suggest a gastric or colonic disturbance, either functional or organic. Physical examination, because of inaccessibility and mobility, may show little or no abnormality. Occasionally, visible peristaltic action, abdominal distention, alteration in bowel sounds or a palpable mass may be detected. A mass may show considerable mobility, being pal-

Dr. Scudamore is a member of the staff in medicine at the Mayo Clinic and Mayo Foundation. He read this paper at a meeting of the Wapello County Medical Society, in Ottumwa, on March 3, 1959.

pable in a different position in the abdomen on separate examinations. Analysis of feces for blood or evidence of faulty absorption, intubation of the duodenum for enzyme studies or to aid in roentgenologic diagnosis, or blood and tolerance tests for evidence of malabsorption may be indicated.

The small intestine, after ingestion of a suspension of barium sulfate, normally shows a herring-bone pattern in the upper part of the jejunum, and a feathery, flaky appearance in the lower portion. Disturbances of this mucosal pattern are important in roentgenologic diagnosis. Often, roentgenologic examinations are limited to the stomach, duodenum and colon, and the rest of the small bowel is overlooked.

In order to make a diagnosis of disease of the small intestine, one must develop an awareness of such disease. For any given diagnostic problem, a physician must consider all possibilities, starting with the common ones and including disease of the small intestine.

REGIONAL ENTERITIS

Regional enteritis^{3, 4} is a progressive, non-specific, granulomatous inflammation of the small intestine, most often involving the terminal ileum, but it may occur at any point in the gastrointestinal tract from the stomach to the rectum. It mainly affects young adults, and is characterized clinically by diarrhea, abdominal cramps, loss of weight, weakness, fever, bleeding or an abdominal

mass. Among the numerous local complications are fistulas (internal or external), abscesses, obstruction, perforation and bleeding. Among the associated systemic conditions are anemia, arthralgias, abnormalities of the skin, deficiency states and visceral changes.⁵ The deficiency states vary from minor vitamin deficiencies to a definite malabsorption or sprue syndrome.

The diagnosis depends on demonstrating the conditions just mentioned along with confirmatory laboratory and roentgenologic evidence of disease of the small intestine. Roentgenologic examination of the colon may be negative, the terminal ileum may fail to fill, or a cecal defect or string sign of narrowed terminal ileum may be seen (Figure 1). The roentgenologic study of the small bowel may show narrowing of the intestinal lumen in one area, multiple areas of narrowing with interposed areas of wider lumen (Figure 2), fistulas or deficiency changes.

The exact cause of regional enteritis is still unknown, despite continued investigation. Therefore, treatment must be supportive rather than specific. At one time, surgical excision of the diseased portion of the intestine was considered curative, but it is now known that recurrence rates are as high as 60 per cent. The current concepts of treatment will be reviewed.

Surgical Treatment.^{3, 6} In the acute stages, which resemble acute appendicitis, surgical intervention should be avoided, for the process may subside or



Figure 1. The colon, showing a string sign (arrow) or narrowed terminal ileum and irregular deformity of the medial aspect of cecum indicative of regional enteritis.

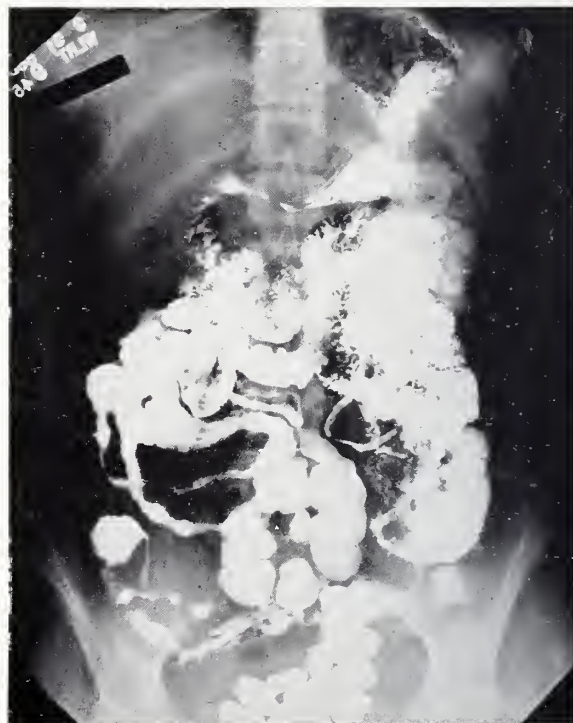


Figure 2. Numerous areas of narrowed lumen in the small bowel with interposed areas of wider lumen characteristic of regional enteritis.

the operation may prove fatal or lead to fistula formation. If acute regional enteritis is discovered at operation, appendectomy should not be done unless the appendix is actually inflamed. In the chronic stage, the indications for operation include the various complications such as obstruction, perforation, hemorrhage, fistulas, intractability (failure to respond to other treatment), or postoperative recurrences with complications. The operation may consist of a primary resection, exclusion or sidetracking procedure, ileostomy or multiple-stage resection. Primary resection is preferred. The results are best when the disease is static and "healed," rather than actively progressive.

Non-surgical Management.^{3, 7, 8} Non-surgical treatment is indicated in the presence of any of the following conditions: localized segmental involvement when the patient refuses to have an operation; long-standing disease of low grade without progression; recurrences after operation; extensive involvement with multiple skip areas; and the acute phase of the disease.

Medical measures are aimed at supporting the patient's resistance to disease and promoting an arrest of the inflammation. The general principles include rest, adequate nutrition, reduction of intestinal activity, correction of anemia, dehydration and hypoproteinemia, and control of infection.

The diet should be high in protein and carbohydrate, with a low residue. Allergy is uncommon, but if food allergens are detected, they should be eliminated. Vitamins, especially of the vitamin B complex or vitamin C, should be given. If steatorrhea or other evidence of malabsorption is present, fat should be restricted, and water-miscible vitamins D and K should be given. A gluten-free diet may be considered in such instances. Vitamin B₁₂ should be given parenterally if macrocytic anemia is present. Rest should include both physical and mental relaxation. Mild sedatives, tranquilizers or antispasmodics may be indicated. Opiates may be required for severe diarrhea, but should be used sparingly. Infusions of whole blood are helpful in treating anemia or the poor nutritional status. Supplemental, oral or parenteral, administration of iron or calcium or intravenous administration of fluids may be required.

Chemotherapeutic agents such as poorly absorbed sulfonamides should be used for the chronic inflammation. Salicylazosulfapyridine (Azulfidine), given orally in the amount of 1 Gm. every three hours during the severe stages and 1 Gm. four times a day on alternate weeks during the chronic stage, has been helpful. The patient should be reexamined occasionally for blood dyscrasias, which may, but rarely do, develop. Side effects such as headache or nausea may be corrected by stopping the medication temporarily and then using a smaller dose. More serious infection, abscess or peritonitis may require a broad spectrum anti-

biotic such as chloramphenicol (Chloromycetin), erythromycin or a tetracycline.

Corticotropin (ACTH), cortisone and related compounds have been used with variable results. In general, they are best avoided. They have been found to improve the appetite or sense of well-being, but none have cured the disease, and when administration has been discontinued, the disease has relapsed. Complications such as hemorrhage or perforation may be more common, or the symptoms of perforation may be masked when steroids are used. Steroids may be of some value if secondary malabsorption syndrome, arthritis, uveitis or erythema nodosum is present.

Roentgen therapy has been moderately successful at the Mayo Clinic.⁷ Such therapy is based on the principle that radiation stimulates the process of healing. The main complication is partial obstruction, which usually clears promptly without surgical intervention. The four quadrants of the abdomen are treated on successive days with a dose of 150 r over each field. The factors used are 250 kv. at a distance of 50 cm. with a half-value layer of 1 to 2 mm. of copper. Three such courses given at monthly intervals are usually required. The main indication for roentgen therapy is failure to respond to other forms of treatment.

With these methods, a fairly high percentage of patients have been maintained in a satisfactory state of health and have been enabled to carry on their usual occupations and daily activities. For other patients, though, management is a trying experience for both patient and physician.

NON-SPECIFIC ULCERS

Primary non-specific ulcers of the small intestine are rather infrequent.⁹⁻¹² Thirty-two non-specific ulcers had been diagnosed at the Mayo Clinic through 1955.⁹ References are included for some of the additional cases reported in the recent literature.¹⁰⁻¹² These ulcers are usually solitary, but may be multiple. They are located either in the upper part of the jejunum or in the lower part of the ileum. They occur three times as often in men as in women, and have affected patients from 8 to 83 years of age. The cause is unknown. The ulcers range in size from 0.3 to 5.0 cm. in diameter, and may be linear or annular. Microscopically, there is evidence of simple inflammation, with a tendency to involve all layers of the bowel wall.

Symptoms may be present for periods ranging from one day to four years or longer. Acute symptoms are those due to perforation, hemorrhage or obstruction. Borborygmi are prominent with obstruction. Chronic symptoms include dyspepsia suggestive of a duodenal ulcer, recurring hemorrhages, or intermittent partial obstruction. Diarrhea is sometimes present. Intestinal obstruction is the predominant manifestation of non-specific ulcers.⁹

The diagnosis of non-specific ulcer is rarely made

preoperatively, but an awareness of this condition should increase the accuracy in diagnosis. A plain roentgenogram of the abdomen may show gas-filled loops of small bowel due to partial obstruction. Roentgenologic examination of the colon occasionally will show a lesion in the terminal ileum. A careful roentgenologic study of the small intestine may reveal an ulcer niche or an area of stenosis (Figure 3).

The treatment for non-specific ulcer is surgical resection with end-to-end anastomosis. Several years ago, the mortality rate was at least 50 per cent, but now it is nearer to 10 per cent. The prognosis is good for the survivors, for the ulcers rarely, if ever, recur. Earlier diagnosis and surgical treatment should improve the prognosis.

TUMORS: CARCINOID SYNDROME

The carcinoid syndrome or vasculocardiac syndrome of metastatic carcinoid may develop when a carcinoid tumor has metastasized to the liver or other intra-abdominal organs. It includes (1) dependent edema, diarrhea, borborygmi and abdominal pain; (2) generalized widening of small vessels of the skin with telangiectasis or pellagra-like cutaneous lesions; (3) patchy flushing of the skin, sometimes with pilomotor symptoms and plethora, and partial cyanosis without polycythemia; (4) pulmonary stenosis with tricuspid regurgitation; and (5) attacks of bronchial asthma of an unusual type.¹³⁻¹⁸ Not every patient presents all of these symptoms and signs. The cardiovalvular changes have been reported only rarely.¹⁸ The flushing is the most dramatic symptom. It usually involves the face, chest, arms or legs, and lasts about 8 minutes. An episode begins with marked flushing and burning of the skin. Cyanosis and, eventually, blanching follow. The flushing may be produced by pressure on the tumor, ingestion of alcohol, parenteral administration of histamine, eating or an emotional reaction.

Carcinoid tumors usually arise in the gastrointestinal tract, and grow and metastasize slowly. Carcinoids may arise in bronchi, metastasize and produce a carcinoid syndrome.¹⁵⁻¹⁷ Carcinoids are called "functioning carcinoids" because they produce serotonin (5-hydroxytryptamine) which is broken down by an amine oxidase in the liver and other tissues to 5-hydroxy-3-indole acetic acid (5-HIAA) and excreted in the urine. Tryptophane is the precursor of serotonin. Functioning carcinoids produce excess serotonin, so that the blood level is elevated, and increased amounts of 5-HIAA appear in the urine. Whether a carcinoid syndrome develops depends on the size of the tumor mass, its secretory functional capacity and the length of time that functioning carcinoid tissue has been present. At least one case has been reported in which a functioning carcinoid primary in the ovary produced the characteristic symptoms.¹⁷

The diagnosis depends upon eliciting some of the specific symptoms, identifying carcinoid tissue and finding excess 5-HIAA in the urine. Serotonin antagonists such as chlorpromazine have not been

effective in reducing urinary levels of 5-HIAA or in relieving the symptoms. The results of radiation and radioisotope therapy have been disappointing. Surgical removal of the primary lesion usually is not helpful. The prognosis is only fair, since the disease apparently is ultimately fatal in all cases, although some patients may survive for many years.

TUMORS: PEUTZ-JEGHERS SYNDROME

The Peutz-Jeghers syndrome consists of generalized intestinal polyposis associated with mucocutaneous pigmentation. This syndrome has a high familial incidence.^{13, 19-23} The polyposis may be called "adenomatosis" or "papillomatosis." The polyps are commonly located in the small intestine, particularly the jejunum, but may be distributed throughout the gastrointestinal system or in the urinary bladder. The melanin spots may be brown or black, and are located most commonly in the mucosa of the lips or mouth, but also may be present in the skin of the face or digits. There is a rather high familial incidence, as has been said, and it is thought that this syndrome is due to a dominant pleiotropic gene responsible for both pigment and polyps. Incomplete syndromes with the pigment or polyps alone have been reported.

The symptoms are chiefly those of intermittent intestinal obstruction, a gastrointestinal hemorrhage or a palpable mass. The obstruction is related to intussusception, and is characterized by colicky abdominal pain. Bleeding may be evidenced by hypochromic anemia, melena, rectal bleeding or sometimes hematemesis. More than 100 cases have been reported, with about equal incidence in each

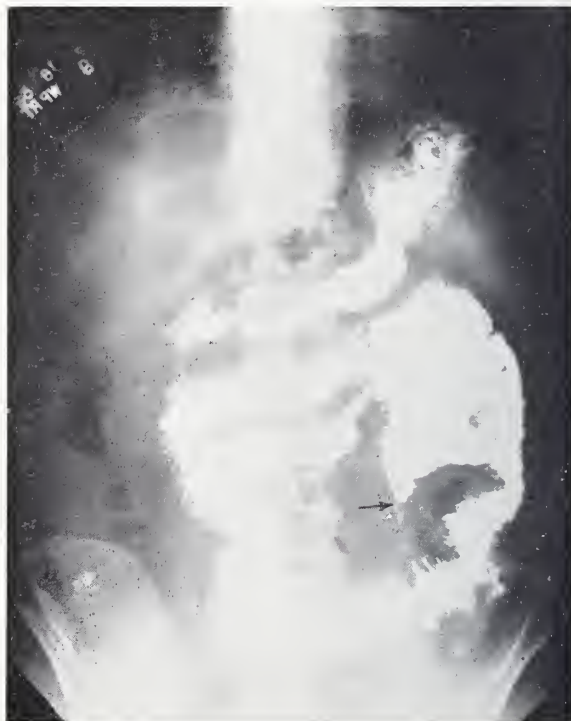


Figure 3. Gradual narrowing and stenosis (arrow) owing to a non-specific ulcer of the jejunum.

sex and in patients ranging in age from 2 to 82 years. Pathologically, most of the polyps are benign. Bartholomew and associates^{20, 23} considered these polyps to be hamartomas, and concluded that malignant degeneration rarely, if ever, occurs. Reports of malignant transformation in some cases suggest that this change may occur very slowly.^{13, 19, 22} The treatment is polypectomy or surgical resection, with end-to-end anastomosis. The resection should be as conservative as possible with each occurrence of obstruction or hemorrhage, for new polyps tend to continue developing in groups, and multiple operations usually are required.

TUMORS: GENERAL REMARKS

Neoplasms of the small intestine are uncommon, but not rare.^{13, 21, 24-27} They constitute only 3 to 5 per cent of the tumors of the gastrointestinal tract. Much has been written about tumors of the small bowel, but often not in a clear, practical manner. Diagnosis is a distinct problem, and seldom is made preoperatively. The symptoms may mimic those of other diseases, and thus may add to the difficulties in diagnosis. Recently, more attention has been directed toward the clinical patterns or features of tumors of the small bowel,^{13, 21, 24} and specific syndromes associated with small-bowel tumors have been described. The clinical manifestations and roentgenologic findings will be discussed from the standpoint of aids to earlier diagnosis.

Incidence. The different types of tumors of the small bowel and their incidence in the Mayo Clinic series are listed in the table. This information is based on the diagnoses made from biopsies or specimens obtained at operation at the clinic from January 1, 1938, to January 1, 1958. It does not include tumors discovered at necropsy. From this study, adenocarcinoma, carcinoid, lymphoma and leiomyosarcoma appear to be the commonest malignant tumors, and leiomyoma, adenomatous polyp and lipoma, the most frequently encountered benign tumors.

Clinical Manifestations. Patients with tumors of the small bowel usually have a number of symptoms and signs, but often a predominant clinical pattern is evident to aid in diagnosis. Some tumors, especially benign ones, may be asymptomatic and may be discovered incidentally at operation or at necropsy. The two commonest clinical patterns of these tumors are obstruction and loss of blood. Other features occur much less frequently, but are important in diagnosis. The significant clinical manifestations will be elucidated in the following paragraphs.

1. *Obstruction* is characterized by a history of recurrent attacks of crampy, mid-abdominal pain, often associated with nausea, vomiting or distention. Intussusception occurs with benign tumors, especially the polypoid ones. Increased peristaltic activity or borborygmi may be evident.

2. *Loss of blood* may occur with associated hypochromic anemia and weakness. Massive bleeding or melena is more prevalent with benign tumors,

TABLE 1
INCIDENCE OF TUMORS OF THE SMALL INTESTINE AT THE MAYO CLINIC
(Based on surgical biopsies or specimens, January 1, 1938, to January 1, 1958)

Type of Tumor	Number of Cases
Malignant	
Adenocarcinoma	96
Carcinoid	51
Lymphoma	57
Leiomyosarcoma	38
Hemangio-endothelioma	3
Lymphangio-endothelioma	1
Lipomyxosarcoma	1
—	—
Sub-total	247
Benign	
Leiomyoma	58
Adenomatous polyp	27
Lipoma	22
Hemangioma	13
Lymphangioma	5
Fibroma	5
—	—
Sub-total	130
—	—
Grand Total	377

and occult bleeding is commoner with malignant ones. Large leiomyosarcomas may cavitate and bleed massively within the tumor.

3. *Abdominal pain* of a non-specific character located in the umbilical region may be present with tumors of the jejunum or ileum, whereas ulcer-like symptoms may be associated with duodenal tumors.

4. *Jaundice*, with the laboratory characteristics of obstructive jaundice, often accompanies tumors of the duodenum, particularly those in the second or third part.

5. *Perforation* with abscess or peritonitis is characterized by tenderness, fever or a silent abdomen. This most commonly occurs with malignant lymphomas.²⁴

6. *The carcinoid syndrome*, characterized by flushing, cyanosis, pain, diarrhea, bronchoconstriction or hypotension may be associated with carcinoid tumors with metastasis to the liver or other abdominal organs.¹⁷

7. *The Peutz-Jeghers syndrome*, consisting of melanin spots in the mucosa of the mouth, lips or skin of the face or digits and having a familial tendency, is seen with polyposis of the gastrointestinal tract.²³

8. *A malabsorption syndrome* characterized by steatorrhea, hypoproteinemia, hypocalcemia, anemia, and vitamin and nutritional deficiencies may be produced by lymphoma, carcinoma or carcinoids involving the small intestine or its mesentery.^{24, 27}

9. *Miscellaneous symptoms* such as loss of more than 10 pounds, weakness, diarrhea or findings

such as fever, an abdominal mass or clubbing of the fingers may suggest some type of tumor of the small bowel.

10. *Asymptomatic tumors* are accidentally discovered at operation or necropsy, and are most often benign.

Although these manifestations are characteristic of tumors of the small bowel, they also may be produced by tumors elsewhere in the gastrointestinal tract. For example, an adenocarcinoma of the stomach may produce symptoms similar to those of a tumor in the upper part of the small bowel, whereas an adenocarcinoma of the cecum may simulate a tumor lower in the ileum. When a patient has any of these manifestations, roentgenologic examination of the stomach, duodenum and colon is advisable. If the results are negative, then roentgenologic study of the small bowel should be done. If the symptoms are definite and persistent, and if roentgenologic studies fail to show evidence of a lesion, surgical exploration should be considered.

Roentgenologic Findings. Plain roentgenograms of the abdomen may show multiple dilated loops of small bowel suggestive of an obstruction.

Roentgenologic study following the oral administration of barium sulfate may reveal definite changes that are helpful in making the diagnosis. These alterations include evidence of a polypoid mass or annular constricting deformities, nodular ulcerated pattern with narrowing of the lumen, widening of the lumen if the tumor develops extraluminally and is necrotic, the appearance of concentric rings in an intussusception, and broad-based filling defects or widening of the mucosal folds (Figures 4 and 5). Roentgenologic examination of the colon after a barium enema sometimes

will demonstrate the filling defects of a tumor in the terminal ileum.

Treatment and Prognosis. The treatment of choice is surgical resection with an end-to-end anastomosis. At the time of operation, metastasis already may be evident. Roentgen therapy may be included, especially for the lymphoma and sarcoma. The prognosis is best when benign tumors are present or when early operation is performed for the removal of malignant ones. A number of five-year survivals have been recorded. Improved prognosis may be expected with earlier diagnosis and treatment.

SUMMARY

In tracing recent developments in the diseases of the small intestine, special emphasis has been placed on the pathophysiologic aspects of disease as related to symptoms and diagnosis, suggestions for earlier and improved diagnosis, and methods of management of each of the diseases. The solution of problems concerning diseases of the small intestine often requires the combined efforts of specialists in the fields of medicine, surgery, roentgenology, pathology and physiology.

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Figure 4. Filling defect and constricting deformity (arrow) due to adenocarcinoma of the upper part of the jejunum.



Figure 5. A polypoid mass (upper arrow) in the small intestine causing intussusception (lower arrow) associated with an adenoma of the ileum.

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Some Considerations in the

"Barium Enema" Examination of the Colon

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DES MOINES

EXAMINATION OF THE COLON with barium sulfate preparations and combinations of roentgenoscopy and roentgenograms is a routine and respectable procedure. Its usefulness is recognized by all physicians, and it is undertaken by general practitioners as well as by specialists in roentgenology or gastroenterology. However, despite this wide use in the medical profession, there are some widespread misconceptions about the process. Few comprehend that there are many different technics available for the colon examination, and that each technic has its quota of limitations and potentialities. In fact, the "barium enema" is employed with such casual frequency that a dangerous psychological posture has developed toward it. Too many examiners rely upon the ingredients of barium, fluoroscopy and a few films to divulge a diagnosis. Diagnoses, of course, are not easy to determine, and the film or fluoroscope demands from the examiner a considerable amount of attention to detail, a polished skill of performance, and a sound, well-considered basic technic.

It is my intent, therefore, to review in depth some of the common misconceptions that restrict the value of the colon examination. Such an analysis warrants attention from all who use this examination. It does offer some basic directions for

the occasional examiner, and more elaborate concepts for the roentgenologist or gastroenterologist. I hope to emphasize that each examination has its particular value and restrictions, and that the examiner must often reexamine the colon by a different technic in order to achieve a diagnosis.

FILM AND FLUOROSCOPE AS DIAGNOSTIC TOOLS

Interwoven in the history of medically applied x-rays is a persistent and sometimes clangorous argument concerning the value of the fluoroscope as a diagnostic tool. As might have been expected, there are honest and dedicated men on either side.

Each examiner tends to prefer a certain basic technic, and most of the methods are adequate if the basic skill of the examiner is high. Yet, I hope to demonstrate that a "spectrum" of technics can best be used in achieving diagnostic success, and that the examiner must be adaptable enough to vary his examinations in exceptional circumstances, for no matter how favorably one may regard the basic and routine examination, it is not applicable to every situation. The referring physician must understand the problems which confront the examiner, and assume some of the responsibility for the proper preparation of the patient.

The Problem of Dimensions. Few realize that

the image cast upon the fluoroscopic screen or x-ray film has only two dimensions. (A wafer-thin sheet of paper is considered to be two-dimensional; a child's playing block, three-dimensional.) Structure upon anatomical structure is superimposed upon it, and a composite image is formed for the diagnostician to survey rapidly. The same result could be obtained if two or more organs were rolled tissue-thin, placed one on top of another upon a cellophane base, and then viewed like a film or a fluoroscopic image. This superimposition represents a formidable problem that the trained mind is accustomed to solve unconsciously. Rapidly, and usually without effort, the diagnostician assigns the different anatomical parts to their correct levels, thus reexpanding the two-dimensional film to resemble the three-dimensional patient. Yet—and with serious consequences—even the most experienced examiner will be trapped by a two-dimensional attitude. For example, a pigmented cutaneous nevus may be assigned to the urinary tract level as a calculus, or to the colon level as a polypoid lesion. If the patient undergoes a needless and fruitless operation, the examiner will not soon forget this problem of dimensions.

Physicians have long been aware of the necessity of dividing anatomy into planes and then attempting to project this particular plane on a film or on the fluoroscopic screen. This procedure is highly important to good diagnostic work. A three-dimensional effect may be created by taking oblique and lateral films, or by turning the patient behind the fluoroscopic screen. The examiner can then integrate the multiple two-dimensional views so as to give himself a concept of the three-dimensional patient. Often more elaborate methods must be utilized. These include stereoscopy, biplane fluoroscopy and body section radiography.

As a practical point, the examiner must be fully aware that the fluoroscopic and the x-ray images are composite views of anatomical structures compressed into one plane. No longer, then, is a colon over-filled with barium regarded as satisfactory for examination, for the diagnostician realizes that only the edges offer the diagnostic values of three dimensions, and that lesions of serious nature can be hidden in the dense depths of too much barium.

Fluoroscopy vs. Films. The world of fluoroscopy is a dimly-lighted screen some 20 cm. square. On conventional screens, the image at best has a clarity equivalent to one's view of a city skyline at dusk. The necessarily long period of dark adaptation (not accommodation!) and the limited viewing space about the screen almost preclude one's sharing his fluoroscopic examinations with colleagues or students. In fact, the pupil will learn very little about fluoroscopic diagnosis until he is allowed to control and manipulate the screen without interference. This inability to share observations imparts needless mystery and dogmatism

to any statement made by a fluoroscopist. This mystery and dogmatism should not be allowed. The patterns cast upon the screen are fleeting and ill-formed, and the interpretation of those shadows is highly subjective. For example, with a combination of fluoroscopy and films, we overlooked or misinterpreted 10 of 68 consecutive gastric ulcers studied over a three-year period.¹ Recently, a professor of radiology exhibited a motion picture in which an obvious esophageal diverticulum was completely overlooked on fluoroscopic examination by a radiologist of unquestioned skill and reputation. I frequently am startled to find an obvious lesion on the films when I have found nothing suspicious during fluoroscopy. Another radiologist,⁷ highly regarded for his skill, has informed me of similar and frequent experiences.

Even the most ardent defenders of fluoroscopy generally agree that the best detail on fluoroscopic screens is inferior to that exhibited on x-ray film. Image intensification, which I shall consider later, does not entirely overcome this disadvantage.

There are many reasons for the difficulty, ranging from the mechanical and physical to the psychological. Morgan and his associates² have presented the physical reasons for poor detail on the fluoroscopic screen. The main reason is the statistical fluctuation of x-ray photons. Statistical fluctuation is a variation in the numbers of x-ray photons available to energize the screen and produce an image—the intensity of the image being proportional to the square root of the number of available photons. For example, with 1,000,000 photons the variation would be $\pm 1,000$ particles, or 1 per cent, whereas with 100 photons, the variation would be ± 10 particles, or 10 per cent. Thus, in a lateral abdominal fluoroscopy the contrast is very low, and a very slight reduction in brightness may obscure a very large lesion. In these areas of low contrast, it is not uncommon for the fluctuation phenomenon to make a lesion appear to the fluoroscopist as dark at one time and light at another.

This fluctuation phenomenon is of less importance as regards x-ray film. Diagnostic work utilizes a film sandwiched between two intensifying screens. Each x-ray photon energizes about 500 light photons, and for this reason a lateral film of the abdomen shows considerable detail of a lesion, whereas not the barest outlines of the mass have been perceptible under the fluoroscope.

The problem of dark adaptation for fluoroscopy is considerable. A minimum of 20 minutes with red-lensed goggles covering the eyes is the accepted time for fluoroscopic preparation. This period, however, is theoretical and arbitrary. As a matter of fact, experience has taught that the time needed for adaptation is dependent upon the amount and type of light to which the examiner has previously been exposed. Is 20 minutes on a bright summer day equal to the same time on a

cloudy day? The ability of the retina to adapt to low illumination is considerably dependent, furthermore, upon the health and well-being of the examiner. Therefore, dark adaptation is a highly personal and variable phenomenon, and any attempt to set a time limit for all examiners in all conditions is highly dangerous. Conforming to a rule may appease the conscience of the examiner and his critics, but it does not insure a satisfactory performance for his retinas.

Most good fluoroscopists do not accept an arbitrary limit. They spend 20 minutes in a darkened room, and during the morning of the fluoroscopic examinations will not leave the darkened environs of the fluoroscopic area to consult with colleagues. Such behavior may well be tolerable and admirable in an academic situation where there is no premium on time and where the examiner can get abundant consultation from his colleagues. But for the physician who visits a hospital on a one-day-weekly basis, this conduct deprives the staff of valuable consultation. I have attempted to circumvent this difficulty by drilling a 5 mm. hole directly over the pupil of the goggles, but have found that this practice is only moderately satisfactory.

In contrast, no dark adaptation is necessary for film interpretation, for under most viewing circumstances detail is superb, and the eye functions efficiently with the high illumination and short distance employed. The ability to share the experience with a colleague, moreover, is of inestimable value and is of direct benefit to the patient.

For these reasons, I am firmly of the opinion that fluoroscopy has limited value at the present time. It should be employed for the observation of peristalsis or for a general survey of an area that is to be marked and examined later by means of films. There is no substitute for the careful and deliberate study of good films, and to this end fluoroscopy is secondary and subservient.

Image Intensifiers. Image intensification, as Morgan warned in 1949,² cannot overcome the difficulties inherent in fluoroscopic screens, for illumination is only one part of the fluoroscopic problem. The viewing field is small, and the equipment usually bulky. It is only in the chest, where the contrast is great, that the image amplifier projects good detail. Some of the models are almost impossible to use on upper gastrointestinal work, and the barium enema examination presents special difficulties. I have found the small field to be frustrating. An alleged sigmoid loop may turn out to be a filled terminal ileum. However, image intensifiers are constantly being improved, and even in their present state have a place in large hospitals or teaching institutions. They are excellent for studying specific areas, and expose the patient to a minimum of irradiation. Considerable time may be saved through shortening the period of dark adaptation. For the academic organization that employs motion pictures of fluoroscopic find-

ings as a part of its teaching program, the modern intensification device is worthwhile. However, for the small hospital or office, it seems wiser to obtain good equipment with phototiming spot-film devices, rather than to expend energy and money on an intensifier mechanism. Of course it may be admirable foresight to install ceiling-suspended tubes for new equipment, since the day is not too far distant when image intensification will be standard equipment for most radiology departments.

COLON EXAMINATION TECHNICS

One should not become addicted to a single technic and exclude all others. Rather, the diagnostician should consider numerous technics and employ them as the occasion demands. In the same manner that the internist employs a spectrum of antibiotics to envelop a disease, the radiologist should employ the different colon examination technics as a spectrum to exhibit and define bowel disease.

1. *The "Plain Barium Enema."* The injection of a barium and water mixture into the colon without the addition of substances such as air or tannic acid is the examination most commonly employed. I believe it to be most uninformative of all. The simplicity of performance is virtually its sole justification, and the complexities that develop in its interpretation might well have been avoided through the use of a more elaborate technic.

The most common error with the "plain enema" is the employment of copious amounts of thin barium. The colon is overfilled, thus obscuring the rectum and the sigmoid loop, which often are the sites of many malignant and premalignant lesions. The terminal ileum is filled, and its coils add further to the difficulty of examining the rectosigmoid.

It may be desirable to fill the terminal ileum if disease of this structure is suspected. However, I am convinced that a study of the colon should be confined to the colon only. The ileum may be well examined after the oral ingestion of 8 oz. of barium followed by 4 oz. of ice-cold normal saline mixture, and this should be handled as a separate examination.

Either at fluoroscopy or with the films, if the colon has been packed with barium, the examiner tends to become two-dimensionally oriented and to forget that he is viewing only the colon silhouette. Large lesions may lie in the depths of the barium and be easily overlooked. Oblique studies add little to the examination. The possibility of water intoxication in children with megacolon must be considered.

The "plain enema" can be a valuable method if the introduction of air is dangerous or if tannic acid is contraindicated because of its irritative nature. The colon should be filled by positioning rather than by pressure. It is obvious, of course,

that the "plain enema" is still useful for the debilitated patient who cannot be properly prepared, and for the patient in whom the examiner is searching only for a gross lesion such as a constricting neoplasm, volvulus or intussusception. Cleansing of the bowel with 2 oz. of castor oil 12 hours before the examination is satisfactory preparation.

2. *Thin Barium and High Kilovoltages.* Some radiologists employ thin mixtures of barium (four parts of water by measure to one part of barium) and kilovoltages up to and above 100 k.v.p.³ The purpose is to demonstrate a translucent column of barium through which superimposed loops may be well visualized. This, in effect, creates an illusion of three dimensions. One must be particularly careful to avoid filling the terminal ileum. Generally, this is an examination that is easily executed and interpreted. A variation of this method is that in which even thinner mixtures of barium are employed with conventional (80-90 k.v.p.) kilovoltages. Figure 1 represents a solid column of thin barium which appears translucent when exposed to 125 kilovolts. The original film clearly demonstrated superimposed loops of bowel.

3. *Tannic Acid and Barium.*⁴ This method is widely employed and is dependable if certain details are carefully followed. The proper combinations of tannic acid, barium and water must be used. I have found that 10 or 15 Gm. of freshly-prepared powdered tannic acid mixed with three

parts of water and one part of barium made up to 1,000 cc. have satisfactory astringent qualities. Cleansing enemas are not recommended, for the retained water changes the concentration of the tannic acid and thus alters its effect. The method is mainly dependent upon the evacuation study, which gives a very good mucosal relief. The shortening of the bowel allows all portions to be studied properly. The barium is spread evenly over the colon in a thin layer, and a three-dimensional effect is achieved. The lacy appearance of the contracted mucosa is so delicate that polyps as small as 1 cm. in diameter may be recognized. Figure 2 is a demonstration of a good mucosal pattern with a tannic acid and barium mixture.

4. *Fluoroscopy Without Radiographs and With Spot Films (Figure 3B).* The authority of the fluoroscopist is usually unquestioned as he pronounces the meaning of the patterns that recently lay on the fluoroscopic screen. I have previously presented the objections to this unhesitating acceptance. It follows, therefore, that the referring physician has every right to have a lesion demonstrated to him either on a spot film or by a partnership viewing of the lesion in fluoroscopy. In an era of many malpractice suits, good sense dictates that some record of disease be obtained upon film and filed for future reference. It is my opinion that the surgeon or referring physician has every right to share the diagnostic experience with the radiologist. Experience has taught that many lesions would go undiagnosed were it not for good films.



Figure 1. Thin barium and high kilovoltage demonstrating that superimposed coils of the rectosigmoid colon can be visualized by this method.



Figure 2. Tannic acid and barium mixture which demonstrates an excellent mucosal relief.

Spot films of good detail add much to the diagnostic abilities of the examiner, and remain as permanent records. Figure 3A is a double-contrast study of the colon which poorly demonstrates a polyp in the rectosigmoid colon. The lesion is clearly exhibited in a spot film obtained during fluoroscopy (Figure 3B).

5. *Double-Contrast Enema.* Moreton^{5,6} has popularized the double-contrast study, and I have found it to be a good routine examination of the colon. The technic has the advantage of three-dimensionalizing the colon by thinly coating all walls with a colloidal barium mixture. Particularly, the rectum and the sigmoid colon may be excellently demonstrated by this means. Under proper conditions, the terminal ileum may be seen in double contrast without any obscuring of the rectum or sigmoid colon. Polyps as small as 1 mm. in diameter can be demonstrated. I consider the resulting mucosal study superior to the necropsy study of the colon. Those who have attempted to examine a bloody, mucus-coated and ridged colon can well understand this statement.

However, the examination has its disadvantages. It is difficult to perform unless the examiner is meticulous as to detail. Colloidal barium mixed with two to three parts of water by volume is instilled into a bowel prepared 12 hours previously by means of 2 oz. of castor oil. Water enemas for cleansing are contraindicated, for water dilutes the barium mixture and spoils the even spread. Re-

tained air dilutes the colon so that large amounts of barium must be used. Particularly, the examiner must fill the colon by positioning the patient and by using the air as a plunger behind the barium column.

The examination is not more time-consuming than the "plain enema," and the visualization of the colon is much superior. Figure 4 is a double-contrast study of a colon. A tiny lesion would be easily visible.

A FALLACY CONCERNING THE RECTUM AND SIGMOID COLON

There is a cliché among physicians that the rectum and sigmoid are "beyond" the fluoroscope and the x-ray film. This attitude has developed because examiners have so over-filled the colon with barium that these structures have been difficult to evaluate. Also, the "plain barium enema" usually fills the terminal ileum and thus fills the pelvis with a mass of barium in which one loop of bowel is hardly distinguishable from another. The use of three-dimensionalizing technics such as obliques is hardly applicable in this situation.

With better technics such as a tannic acid mucosal study, high kilovoltage and thin barium, or a double-contrast study, these areas can easily be studied, and thus become the responsibility of the fluoroscopist or film interpreter. For example, Figure 6 demonstrates a double-contrast study of the rectum and sigmoid colon. Tiny polypoid lesions may be visualized by this method. I have, in fact, discovered several lesions that had not been observed by the proctosigmoidoscopist. Figure 6A is a very good double-contrast examination of a

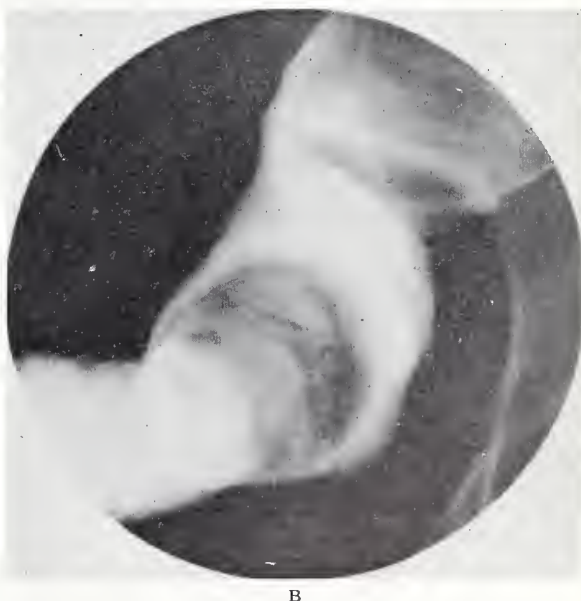


Figure 3A, although a good double-contrast study of the colon, obscures a polypoid lesion of the rectosigmoid (arrow). Figure 3B, a spot film obtained at fluoroscopy by a compression device, demonstrates the lesion clearly.



Figure 4. Double-contrast study with colloidal barium spread on the mucosa by positioning. Note that even in a very large redundant colon, a very small lesion might be demonstrated.



Figure 5. Lateral view of the rectum outlined with colloidal barium and air. There is little excuse for overlooking small lesions in the rectum or rectosigmoid colon, and the radiologist is at least an equal of the proctosigmoidoscopist in discovering these small lesions.



Figure 6A, though an excellent examination, does not cause the examiner to suspect the constricting neoplasm noted in Figure 6B, which is a lateral view of the rectum with a double-contrast enema. This emphasizes the need for different positions which, in effect, three-dimensionalize the patient.



patient with only a few significant symptoms. The anteroposterior examination and two other views demonstrated no lesion. Figure 6B of the same patient is a lateral rectal view obtained shortly after the patient had evacuated a very small amount of barium. Clearly shown, inches above the examining finger, is a constricting neoplasm that was later confirmed by surgical exploration.

The time has passed for the examiner who concedes this area to the proctosigmoidoscopist, and there is little excuse for a colon examination's failing to disclose a lesion in this area. Personally, I am more concerned about the cecum and the ascending colon, where many lesions amenable to early surgery go unobserved despite excellent technics and careful examination.

There is a position developed by Chassard-Lapiné which often demonstrates the sigmoid loop. The sigmoid colon coils from ventral to dorsal, thus superimposing bowel loops (Figure 7A), and an area of narrowing in the diverticulosis is not suspected. The Chassard-Lapiné view, in effect, looks down into the pelvis (Figure 7B) and "straightens" the loop. A definite area of narrowing which could have been a neoplasm is seen. (The patient was not explored.)

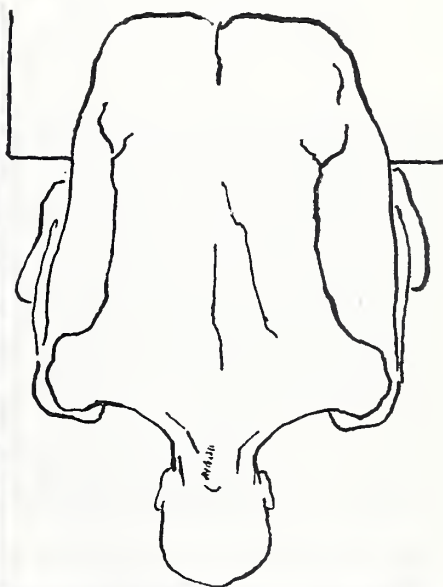
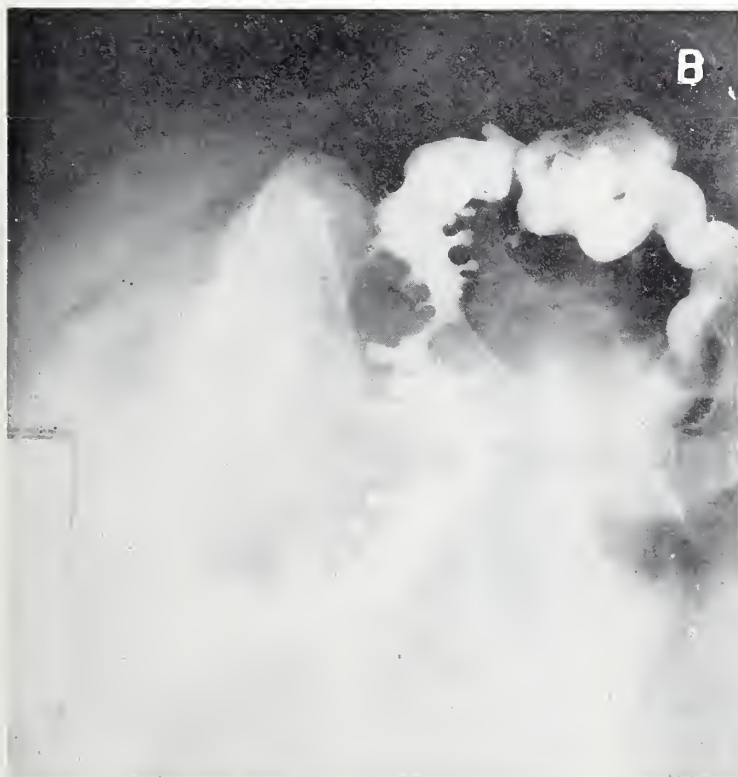


Figure 7A, a routine double-contrast study, fails to demonstrate the rectosigmoid colon and the narrowing in the diverticulosis area. The Chassard-Lapiné view, Figure 7B, clearly shows this narrowing. It was suspected that this was a neoplasm, but the patient was not operated upon. This is another example of the importance of three-dimensionalizing the patient by additional views. The inset in Figure 7B shows the positioning of the patient for the Chassard-Lapiné view. The squatting posture allows the x-ray tube to "look down" into the pelvis.

This demonstration will, I hope, destroy the cliché that the examiner should ignore the rectum and sigmoid colon, and emphasize that these areas should become the irrevocable responsibility of the well-trained and conscientious examiner.

COLON PREPARATION

The examiner is primarily responsible for the diagnosis of colon lesions, but paradoxically is often without the authority or cooperation essential to the proper preparation of the patient. Many referring physicians object to castor-oil preparation and, strangely enough, also are careless about insisting that the colon be properly cleansed by means of enemas. Some even accept the "small enema" in a disposable plastic container as an adequate preparation of the colon. The result is a frightening situation, and worst of all, despite the skill of the examiner or the perfection of the equipment, a serious lesion in the colon may be overlooked! Human nature being what it is, the most adamant and rebellious physician who refuses permission for a 2 oz. castor-oil purgation is usually the most vituperative when a lesion is not diagnosed.

In my opinion, there is no substitute for 2 oz. of castor oil given in orange or other juice at least eight hours before the examination. Castor oil is almost always well-tolerated, despite the protests of the patient. Of course, there are situations in which purgatives of this nature are contraindicated,

and the examiner is expected to be reasonable. However, a surgeon would not consider exploring the abdomen without a proper preparation of the skin. Should a colon examination be less properly prepared? The loss of a life because of an overlooked carcinoma is as serious as the loss of a life because of infection.

I do not believe that cleansing enemas should be used, for air and water introduced into the colon are difficult to expel. The retained fluid dilutes tannic acid and spoils the mucosal relief; it dilutes the carefully measured and mixed barium that is introduced for a double-contrast study; and the thinned barium will not properly cover the bowel mucosa. The air dilates the colon, and therefore large amounts of barium must be used to reach the cecum. Filling is difficult because the distended colon forms haustral "baffles" over which the barium flows with great difficulty.

It is obvious that many patients are acutely ill or debilitated, and cannot undergo purgatives or even cleansing enemas. Tannic acid colon study is best in the uncleansed colon, for the acid has an astringent and purgative effect, and following evacuation the mucosal study is surprisingly good, and usually the intestinal contents have been expelled.

REEXAMINATIONS

Surgeons do not hesitate to reexplore the abdomen, or "take a second look," in the event of a



Figure 8A, a double-contrast study, demonstrates a benign polyp. Figure 8B, a tannic-acid study, defines the lesion more clearly. This example emphasizes the value of reexamination in doubtful cases and the need for utilizing more than one technic in colon examinations.

postoperative complication. Why, then, should the reexamination of the colon by fluoroscopy or x-ray be demeaned? Perhaps it is too easy to rationalize that a poor preparation is of no consequence, or that a slight deformity of the colon is due to peristalsis. Abstractions, unfortunately, lack the urgency that impels the surgeon to act. The simple fact is, however, that a failure to perform a colon examination properly or a failure to reexamine the colon may risk the life of the patient. Figure 8A barely demonstrates a benign polyp (arrow). Re-examination with tannic acid and barium clearly shows the polyp (Figure 8B). No lesion was suspected by fluoroscopy.

No examiner should recommend exploration on the basis of the first examination, unless the lesion is large and unusually obvious.

CONCLUSIONS

Some of the problems concerning the "barium enema" examination of the colon have been considered. Despite the wide use of this examination, many physicians do not fully understand the limitations and potentialities of this procedure. Sometimes the fluoroscopic examination is overemphasized, and the examiner fails to obtain good films which can be carefully and leisurely studied under good illumination and in the presence of the referring physician who is acquainted with the clinical data. Image intensification, although of some advantage in fluoroscopic study, has definite disadvantages and limitations.

A source of diagnostic error is the failure to appreciate that the fluoroscopic and the film images are two-dimensional. This error causes the examiner to accept poor technics such as filling the colon with copious amounts of barium, and thereby obscuring or altogether hiding lesions there.

I have discussed in detail and have illustrated various examinations which tend through air-barium contrast or mucosal relief to three-dimensionalize the colon and thus demonstrate very small lesions which may be premalignant.

Proper cleansing of the colon is necessary. This should be done with 2 oz. of castor oil. Water-enema preparation is both unnecessary and detrimental to a good examination.

Reexaminations are necessary for adequate study, and should be patiently accepted by the referring physician. The rectum and sigmoid can be adequately demonstrated, through the use of proper positioning and good technics, and the examiner should accept full responsibility for discovering lesions in this area.

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NEBRASKA HEART ASSOCIATION CONFERENCE

Following is the tentative program for the 1959 Scientific Conference of the Nebraska Heart Association, to be held at the Blackstone Hotel, Omaha, October 1-3.

Thursday, October 1

- 8:30 a.m. "Cineangio Cardiography"—Enrique Cabrera, M.D., Mexico City
- 9:30 "Left Heart Catheterization"—Jerome Murphy, M.D., Omaha
- 11:00 SYMPOSIUM—RECENT DIAGNOSTIC PROCEDURES IN CONGENITAL HEART DISEASE—Delbert Neis, M.D., Omaha, and Drs. Cabrera and Murphy
- 1:00 p.m. "Advances in Management of Refractory Congestive Heart Failure"—Dr. Cabrera
- 2:00 SYMPOSIUM—SURGERY FOR THE CARDIAC—John Barmore, M.D., Omaha, and Drs. Cabrera and Neis

Friday, October 2

- 8:30 a.m. "Pathogenesis of Essential Hypertension"—A. C. Corcoran, M.D., Cleveland
- 9:15 "Advances in Medical and Surgical of Hypertension"—John H. Moyer, M.D., Philadelphia
- 10:15 "Side Effects of Commonly Used Anti-Hypertensive Agents"—Dr. Corcoran
- 11:00 SYPOSIUM—DIFFERENTIAL DIAGNOSIS OF HYPERTENSION, WITH SPECIAL EMPHASIS ON SURGICALLY REMEDIABLE CAUSES OF HYPERTENSION—Travis Winsor, M.D., Los Angeles, E. A. Hines, Jr., M.D., Rochester, Minn., and Drs. Corcoran and Moyer
- 1:30 p.m. "Diagnosis and Management of Acute Occlusive Peripheral Vascular Disease"—Dr. Hines
- 2:30 "Diagnosis and Management of Chronic Occlusive Peripheral Vascular Disease, With Special Emphasis on Plethysmography"—Dr. Winsor
- 4:00 SYMPOSIUM—SURGICAL MANAGEMENT OF OCCLUSIVE PERIPHERAL VASCULAR DISEASE—Drs. Hines and Winsor

Saturday, October 3

- 8:30 a.m. "Advances in Electrocardiography"—Dr. Cabrera
- 9:30 "Diagnostic Evaluation on Electrocardiographic Unknowns"—Dr. Cabrera
- 10:45 "Rehabilitation of the Cardiac"—Dr. Corcoran
- 11:30 CLINICAL PATHOLOGIC CONFERENCE—Drs. Cabrera, Winsor and Moyer

Modern Treatment of Strabismic Amblyopia

GUNTER K. VON NOORDEN, M.D.

IOWA CITY

STRABISMIC AMBLYOPIA is a condition that every ophthalmologist encounters almost daily. If not recognized and treated early in life, it can permanently impair the patient's binocular vision. With further development of technology, the professions that require good binocular vision are becoming increasingly numerous. Thus, the choices of future professions and careers are already considerably limited for the amblyopic person. Every attempt should be made by the physician to diagnose amblyopia promptly in the small child and to treat the condition effectively.

In this paper, the nature of amblyopia, its diagnosis, and the new ways of treating it will be discussed.

Strabismic amblyopia is a defect of visual acuity in one eye without visible pathological changes in the fundus or in the refractive media. In most cases, this decrease in visual acuity is reversible if attacked by appropriate means. It occurs in eyes with strabismus, and in eyes without strabismus or a history of such. We agree with Burian,¹ who states that the decrease in visual acuity in strabismic amblyopia is caused by active inhibition of the macular function of form vision, in the course of an adaptive mechanism in order to avoid diplopia or confusion. Another designation for this type of impairment is *amblyopia ex anopsia*. This expression applies best, in our opinion, to cases in which there is a considerable amount of ametropia or anisometropia.

Another form of amblyopia is characterized by the findings of poor visual acuity which cannot be explained by any of these factors. One may assume that this condition is due to poor anlage of the visual system, or to organic damage of the visual pathway somewhere between retina and cortex, in which case we refer to the condition as "organic amblyopia." It has to be differentiated from strabismic amblyopia before any treatment is initiated, and we recently described a clinical test for doing so.² We are using a neutral density filter, which when held before a normal eye reduces the visual acuity to about one-half of its numerical value. The same filter, when held before the amblyopic eye, causes only minimal reduction of visual acuity, leaves it unchanged, or even improves it. In eyes with organic amblyopia, a drastic reduction of visual acuity takes place, pointing to the anatomical damage of the retinal perceptor system, whereas the impairment in strabismic amblyopia can be considered functional in nature.

Other interesting characteristics of strabismic

amblyopia have been described,^{3, 4} and they lead us to believe that we are dealing with a selective, inhibitory adaptation of the sensory visual system, occurring in the presence of anomalies outside the retina.

TESTS FOR STRABISMIC AMBLYOPIA

In the diagnosis of strabismic amblyopia in the presence of strabismus, one should not encounter too many difficulties. For the determination of visual acuity in children younger than the reading age, we are using the single letter "E" test or the marble test. In the former of these, single "E" letters of various sizes are presented to the child, and he is asked to indicate the direction in which the three bars of the letter are pointing. The marble test is suitable for even smaller patients. The children are asked to place marbles in holes on a test plate, and the facility they exhibit in doing so indicates, at least, whether or not useful visual acuity is present. Physicians who are not accustomed to doing daily acuity tests in their offices may be reminded in this connection, that children not infrequently develop an unexpected shrewdness in cheating the examiner during the procedure, perhaps in an attempt to give a good performance. This possibility must not be neglected, especially when visual tests are carried out by a nurse, and special care must be taken to occlude one eye firmly with a black patch while the other eye is being tested.

It is frequently thought that treatment of amblyopia will have to be postponed for children who are too young to cooperate with any of the previously mentioned tests. This line of thought may be quite disadvantageous for the patient. For the diagnosis of amblyopia in very small children, the visual acuity does not have to be determined, for other criteria are available. As soon as the child is old enough to allow the physician to diagnose monocular squint, the danger of amblyopia is threatening, or amblyopia is already present in the deviated eye, and occlusion treatment of the sound eye should be initiated immediately.

It must be pointed out that the best treatment for amblyopia is its prophylaxis. As soon as a mother becomes aware of a deviation of the eyes of her child, she should consult an ophthalmologist. Pediatricians, general practitioners and social workers can aid greatly in guiding these children into proper channels. The fallacious reassurance offered by physicians to the anxious parents, that a cross-eyed child "may outgrow his squint," or that treatment should be delayed until he reaches pre-school age, quite often is responsible for the

Dr. von Noorden is a member of the staff in ophthalmology at the S.U.I. College of Medicine.

development of incurable amblyopia—a severe handicap for the patient.

Recent advances in the treatment of amblyopia have put emphasis upon another diagnostic step—the determination of the fixation behavior. Fixation in amblyopic eyes can be central, parafoveal, paramacular, eccentric or wavering. The most commonly used method of determining fixation, is observation of the corneal light reflex on monocular stimulation. In this test, the relation of the pupillary light reflex to the center of the cornea is measured. This method may be of value as a rough indication of whether foveal or eccentric fixation is present. It is too coarse, however, to indicate smaller fixation anomalies. A far more exact method was recently introduced by Cüppers.⁵ He designed the visuscope, an ophthalmoscope with a small asterisk inserted in the path of light, so that its image can be seen by the examiner on the patient's fundus. The patient is requested to fixate the target as closely as possible while his other eye is covered. We have been using this instrument for some time, and find it irreplaceable in making an exact diagnosis of fixation. An ordinary ophthalmoscope will serve the same purpose when it has been modified by a simple procedure.⁷ We also use fixation photography,⁸ but this method requires a fundus camera that is not always available.

OCCLUSION THERAPY

After amblyopia has been diagnosed, and the fixation behavior has been determined, the therapeutic approach must be decided upon. The treatment will vary according to the age of the patient and his fixation behavior. Naturally, adequate refraction should be prescribed for amblyopic patients in whom a refractive anomaly is diagnosed on the first visit, and it should have been worn for at least one month before any other treatment is carried out.

If central fixation is present, permanent occlusion of the sound eye should be commenced immediately, combined with daily fixation exercises such as stringing beads, coloring pictures, playing puzzle games, etc. The patient should be seen at short intervals so that his acuity can be checked and so it can be ensured that he is wearing his patch consistently. In children with monocular deviation who are too small for acuity testing, the dominant eye should be occluded until the deviated eye becomes dominant. To determine this, the ophthalmologist should see such patients at least once a month. Not infrequently, the normal eye will lose its dominance under cover. If it does, the patch is switched over to the previously amblyopic eye. By repeatedly alternating the occlusion, one can maintain a condition in which no amblyopia, or abnormal retinal correspondence develops. Fixation is reinforced, and the development of extrafoveal fixation caused by a constant deviation is avoided.

PLEOPTICS

Occlusion of the sound eye in extrafoveal fixation, rarely leads to success in children older than five. In fact, we feel that such treatment would reinforce the non-foveal fixation and is actually contraindicated. Eccentric fixation was thought to be a rare condition, until the new diagnostic methods were developed. We have found it to be quite frequent in our patients. Of 433 amblyopes whom we have seen in the last 14 months, 191 (44 per cent) were diagnosed as having non-foveal fixation on their first examination in our orthoptic department. Eccentric fixators have been a great problem to the ophthalmologist in the past. Occlusion over a long period of time rarely led to success, the patients were usually given up as hopeless, and were forced to content themselves with an eye having less than 20/200 vision. A discussion of the pathophysiology of eccentric fixation would exceed the scope of this paper. It may suffice to state, that it develops as a result of constant deviation and stimulation of a non-foveal point, which finally acquires the spatial value "straight forward," normally occupied by the fovea. On monocular stimulation, the patient invariably uses this eccentric retinal area when the eye takes up fixation.

It was Bangerter,⁹ and later Cüppers,⁵ who introduced an original and effective therapeutic approach to this condition. This form of therapy, named "pleoptics," consists of active and passive stimulation of the macula. Bangerter has devised many ingenious methods of training amblyopic patients. At present, we have had no experience with any of his instrumentation—equipment designed to train the oculo-manual coordination through the aid of tactile and acoustic senses.

A somewhat different therapeutic approach was originated by Cüppers. He established two requirements for a successful attack upon amblyopia with non-foveal fixation:

1. Reestablishment of the physiological superiority of the fovea over the periphery
2. Relocation of the "straight forward" localization from the non-foveal point back to the fovea.

These requirements can be fulfilled by the after-image method⁵ combined with occlusion of the amblyopic eye before and during treatment, as long as localization remains abnormal. The treatment is carried out with the euthyscope, a special ophthalmoscope containing black marks of different sizes and connected with a rheostat permitting bright illumination of the fundus. While the macula is covered with the black mark, the periphery including the non-foveal fixation point is dazzled by bright light. A negative after-image is thus provoked and intensified by a flashing room light. The patient sees a clear spot surrounded by a ring scotoma. This clear spot corresponds to the position of the fovea in space, and the fovea has momentarily regained its superiority over the

scotomized periphery. The sustained attention directed to the clear spot, will enhance the recovery of its physiological straight-ahead value. Once localization has become normalized—i.e., when the images falling on the fovea have been localized by the patient as being straight ahead, and fixation has become central—visual acuity improves rapidly. The sound eye remains occluded between treatments until fixation has become foveal.

We have been using the after-image method during the past year,⁶ and our results have been quite encouraging, particularly in cases that had been practically given up as hopeless prior to our treatments. The actual treatment is rather time-consuming. Sessions of 30 minutes twice daily are required, often for several weeks, before success becomes apparent. Some patients, however, showed improvement after only a week of treatment. Excellent cooperation and alertness on the part of the patient, and a sacrifice of time and effort on the part of the physician, are necessary. These requirements rule out, on the one hand, children younger than six, and on the other hand, the busy practitioner as therapist. An experienced ophthalmoscopist is required, and with the limitations that have just been mentioned, pleoptics must be confined, at the present time, to the larger eye centers where medical personnel are available, and willing to devote considerable time and effort to treatment of amblyopia.

An amblyopia school similar to Bangerter's institution in Switzerland would, of course, be the ultimate goal, for the children would not have to be isolated and could attend regular school while receiving daily pleoptic treatments. Such a project could be attached to a school for handicapped children or to a summer camp, and we hope that this can be realized in the near future.

TECHNICS AVAILABLE TO THE PRACTITIONER

What other therapeutic possibilities are available for the practitioner who does not have access to pleoptic methods, and yet is frequently confronted with non-foveal fixation? If the patient is an adult or in his late teens, nothing can be done. In some cases, however, surgery for cosmetic reasons has resulted in spontaneous normalization of fixation behavior, with subsequent improvement of visual acuity. If the patient is younger than five, occlusion of the good eye may in some cases be sufficient to break up faulty fixation, and visual acuity will improve. If this does not lead to success within four to six weeks, occlusion of the amblyopic eye should be given a trial. This method can also be tried in older children. Constant patching of the amblyopic eye occasionally breaks up eccentric fixation, and the eye begins to wander. When this step has been reached, occlusion is switched back to the sound eye until fixation stabilizes. It should be emphasized again, that children older than five will hardly ever benefit from

occlusion of the sound eye as long as fixation is eccentric. Such treatment would rather reinforce the abnormal fixation behavior, and therefore cannot be recommended.

Temporal occlusion¹⁰ may also be tried. Special care must be taken that the patch covers one-half of the pupillary opening. We have used this method with some degree of success.

SUMMARY

Strabismic amblyopia presents itself to us in various forms. Many of our cases can be treated and cured by the conventional method of occluding the sound eye, combined with fixation exercises for the amblyopic eye. Patients with non-foveal fixation, however, have in the past been regarded as incurable, and occlusion treatment has usually been unsuccessful. The development of pleoptic methods has opened a new and promising therapy for this condition.

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POSTGRADUATE COURSE IN UROLOGY S.U.I., IOWA CITY

Friday, September 25, 1959

- 9:00 a.m. OPERATIVE CLINICS—Drs. R. H. Flocks, R. G. Bunge, D. A. Culp and J. S. Greenleaf
- 2:00 p.m. URETERAL INJURIES—Drs. R. H. Flocks and W. C. Keettel
- 2:45 "Infertility"—Dr. Bunge
- 3:45 RENAL DISEASE AND HYPERTENSION—Drs. W. M. Kirkendall, D. A. Culp and J. S. Greenleaf
- 4:30 PYELOGRAM CLINIC
- 5:00 BUSINESS MEETING, IOWA UROLOGICAL SOCIETY
- 6:00 DINNER MEETING, IOWA UROLOGICAL SOCIETY
Saturday, September 26, 1959
- 9:00 a.m. WARD ROUNDS—Dr. Flocks

The course has been approved by the AAGP for nine hours of Category I credit.

A New Look At

The Genetics and Biochemistry of Some Hereditary Lipidoses

W. E. SANDERS, M.D.

TUCSON, ARIZONA

MORE THAN 50 YEARS AGO, I prepared a paper for the Iowa Academy of Science on the heredity of the then unknown Tay-Sachs disease which had successively attacked the three children of a set of healthy parents in whose ancestral lines through four generations no dysgenic familial diseases were revealed.¹ Coming at a time when the evolutionists and the church looked forward to a physical and spiritual Utopia, it was a shocking catastrophe for the parents and a challenge to a profession just entering its biochemical phase.

I had already encountered such familial diseases as club feet, neuromuscular atrophy, neurotropic perforating ulcers of the feet,² blotchy opacities of the cornea in a family of children, and the now well-understood Rh hereditary jaundice in the newborn.^{3, 4} In most of these diseases, a well-studied family pedigree through two or three generations reveals some hereditary taint.

According to the then-prevailing Darwinian theory that what a species, a family or an individual becomes depends upon the total experiences of the foregoing ancestral line, it seemed that the state, its institutions, its families and its individuals would improve from the bottom up as its earthly habitat approached perfection. It must have been the hangover of this old Lamarkianism that dominated such men as Francis Galton, in England, August Weismann, in Germany, Max Nodeau, in France, and our own Spencerian optimism in America that delayed for 40 years the rediscovery of Mendel's epoch-making experiments on the inbreeding of hybrids.⁵

Since medical science lacked the terms and symbols for equating its phenomena, it is not surprising that my venture was not altogether definitive. I believe that it was, however, the first attempt to trace the heredity of the Tay-Sachs disease, now recognized as a two-fold mutant recessive gene that must be transmitted by both parents. I have been unable to find another such family recorded in the state. At the time, there had been only three contributions made to the world medical literature on this subject. The first, by Tay,⁶ dealt only with the ophthalmic features; the second, by Sachs,⁷ reported the autopsy findings in Tay's case; and the third, by Kingdon and Russell,⁸ gave

an up-to-that-date description of the pathology and hereditary nature of the disease.

Two children of an Iowa family that I have located recently and have traced through four generations represent, I believe, the closely-related Niemann-Pick disease. It occurs with about the same frequency as Tay-Sachs and the closely related Spielmeyer-Vogt type. All diseases of this group are bisexually transmitted, and their rarity depends on the chance mating of two unsuspected carriers in a panmictic population.

Although some of the facts of the neurone degenerations that exist in these diseases have been known for about 40 years, nothing further was learned regarding their symptoms or biochemistry until the most recent decade.⁹ In tracing the histories of the Tay-Sachs and Niemann-Pick families that I am following, I shall attempt to stress hereditary factors and symptomatology.

I. THE TAY-SACHS DISEASE FAMILY, 1893-1908

My knowledge of this disease dates from 1894, when I began the practice of medicine in a rural Iowa settlement and came to know the healthy parents and a year-old child of a well-to-do family. This girl had been born normal at term after an uneventful pregnancy, but during her first year, the family and their doctors noted that she was not developing physically or mentally as most babies do.

At about the beginning of her second year, her parents took her to a nationally known surgeon, who did a bilateral craniotomy for microcephalic idiocy according to the current practice of that day. The operation had no discernible effect on the progress of the disease during the remaining 15 years of the girl's life.

In about 1895, a boy was born. He followed the same general pattern as his sister until his death at about the age of nine. In 1900, I attended the mother at the birth of her third child, a son, and as the family physician I saw much of these children until 1907. This third baby was normal at birth, but died of the disease when almost four years of age.

Symptoms. The clinical pattern of Tay-Sachs disease as I observed it consisted of blindness, lack

of normal muscular tone, general weakness and inattention—all noted at about the beginning of the second year. None of these children ever learned to stand or to talk. In the later course of the disease, the little girl began to have episodes of muscular twitching and occasional clonic convulsions. These were followed temporarily by the mortician pose, with hand, foot and lid drop, and with a lethargic stupor characteristic of decerebration.¹⁰ The hyperacuity of the acoustic sense I noted in the boy for the first time when he was about four years of age and after he had already become blind. Each of these children showed personality distinctions in the middle phase of the disease, and rarely appeared angry or unhappy.

Viewing these symptoms from the vantage point of our present knowledge of the wide distribution of the pathology of the disease, the trained neurologist should be able to deduce the areas of central nervous system involvement, and to note the nature of their progress. Briefly, one would not hesitate to say that these little patients suffered from a hereditary dystrophy, but died of a metabolic disorder of wide distribution. I shall elaborate further on the metabolic features of the disease when I deal with its biochemistry.

II. THE NIEMANN-PICK DISEASE FAMILY, 1947-1959

In the Niemann-Pick disease family with which I am acquainted, the parents are of American-born stock. They were married when the man was 28 years of age and the woman 18. Their four children were born naturally after uneventful pregnancies, except for the third, who "was born when the mother's health was not good." Two of the children were afflicted with Niemann-Pick disease, but the two older children are normal.

The third child (R. M., a boy) was born September 6, 1953, at which time it was noted that he had a congenital cataract in one eye. At the age of three months, he developed jerky muscular spells, with rolling of the eyes, several times a day. From that time on, it was noted that he did not develop as did the two older children. His teething was late, and he did not learn to talk. He was committed to the State Hospital and School, at Woodward, at the age of two years and nine months. The record of his physical examination at that time says: "He is pale and undeveloped; head rachitic shape; cannot sit up nor speak words though he does make some sounds; muscles atrophic; movements jerky, purposeless and uncoordinated; is blind and has nystagmus."

After a year's institutional care, the report of a re-appraisal physical examination states: "The right eye is completely blind, with changes in the anterior chamber which prevent examination of the eye ground. The left eye shows a dark patch on the macula and degeneration of the retina. He does not respond to human voices, but reacts to the ringing of a bell. IQ, -20."

It was considered that his symptoms suggested affections of the pyramidal, extra-pyramidal and cerebellar systems. "Diagnosis: infantile familial amaurotic idiocy; prognosis, poor; recommendation, continued institutional care."

The fourth child (B. M., a girl) was born March 26, 1955, at which time her afflicted brother was 1½ years of age. The pregnancy, delivery and postpartum period were normal for both mother and child. When the baby was just a month old, the mother urgently called the doctor, saying, "The baby is having a spell." The doctor noted a hemorrhagic swelling on the infant's head and had to drain it. The baby was kept in the hospital for more than two months.

It was noted that the mother was extremely nervous and upset, and that her housekeeping was characterized by confusion and disorganization. The care of these children was such a drain upon her nervous system that she herself was placed for a time in a mental health center. The social history suggests that because of the mother's incompetence the baby was hospitalized again at six months of age. She remained there until she was admitted to the Woodward State Hospital and School March 27, 1956, when she was just a year old.

The report of the baby girl's physical examination on admission reads as follows: "The patient B. M. appears to be in good condition; weight 16 lbs.; height 26 inches; head, symmetrically enlarged, circumference 21 inches; the fontanel unenclosed and bulging, with a protruding forehead and occiput; slight spasticity of the left leg. She was cooperative for her age, responsive to voices and environment and moving objects in the visual field.

"Diagnosis: chronic brain syndrome, gross brain trauma, undeveloped mental hydrocephalus. Recommend further investigation in re familial amaurosis."

The most recent ophthalmoscopic examination reveals "pigmentation of the retina, not typical of Tay-Sachs idiocy." By about the third year, she still is unable to stand or talk.

For the present, one may consider that all the symptoms of these two children are due to a hereditary pathogen that is responsible for Niemann-Pick disease. We can be sure that if this is the Niemann-Pick disease, it is transmitted as a recessive pathogen from both parents, for the history here recorded suggests that it develops as an infested zygote from the moment of fertilization. If these parents should later have a pair of homozygous twins, only one of whom develops the disease, some puzzling aspects of the problem may be clarified. I have found two cases of this disease in the literature that were identical twins. The same literature, covering a period of 10 years, shows 11 cases of the related Spielmeyer-Vogt disease,

making in all about 40 of these unusual lipodystrophies.

A START AT EXPLAINING THESE DISEASES

In the light of the 50 years of records of these strange hereditary diseases and of the case histories of the two families here reported, one can begin to understand something of the origin, means of transmission and progression of these fatal maladies.^{14, 15, 16, 17, 19}

The physician and the biologist know that mutant variables may rise, ebb and flow in protoplasm more or less fortuitously throughout the life span of living creatures. Thus, there is something unique in the structure and behavior of living protoplasm that makes the issues of life of the individual an unpredictable adventure. Fifty years ago, our clinical and histological thinking was on the mass or atom level. Twenty-five years later, a noted physical chemist suggested that the optical refractions of certain crystals may be due to the overloading of one side of their

molecules so that when they stand up straight they lean over backwards. We now know that something like this in the amino acid molecules accounts for the refractions present in some of these complex proteins.¹⁰

The Cellular Organization and Biochemistry of Protoplasm. For many years, histologists and pathologists have wondered about the significance of the mitochondria and other organized bodies within the cytoplasm. Indeed, this was a major study in the investigation of the goiter problem conducted at the surgical laboratory of Johns Hopkins Hospital in 1910. Now that we can study these granules with the electron microscope at a magnification of about 20,000 diameters, they are coming to be of tremendous interest to biochemists. I think that these organized bodies are a major problem for those who are engaged in the study of the lipidoses. With the electron microscope, many of these molecules can now be photographed, and when we get them on a suitable background, we can perhaps actually see them in three dimen-

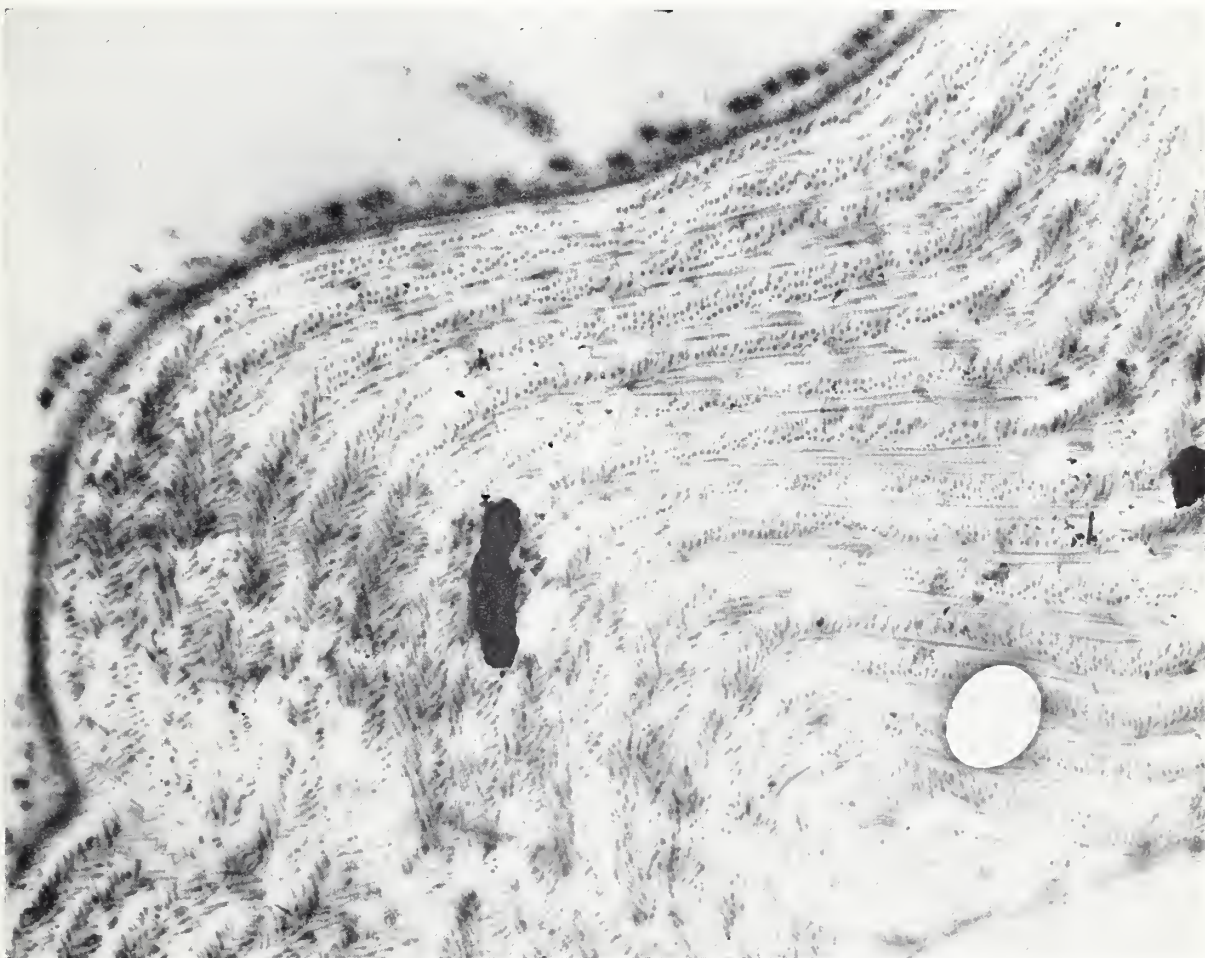


Figure 1. Electron micrograph of ultrathin cross-section through basement lamella, showing on top the epidermal border ($\times 18,000$). (A slightly different reproduction of this photomicrograph appeared in Weiss, P. A.: Compounding of complex macromolecular and cellular units into tissue fabrics. *Proc. Nat. Acad. Sciences*, 42:819-830, (Nov.) 1956. It appears here through the courtesy of Dr. Weiss.)

sions. Some may be flat, but others are spherical or cuboid, and some are even twisted in long spirals of three linear chains.²⁰

Herewith, I am presenting some microfilms showing the organization of plasma and the configuration of molecules at these high magnifications. Figure 1 (1) shows the relative thickness of the epidermal cells (E) and their basement lamella (B), beneath which are a few connective tissue nuclei in the plasma pool, and (2) shows the laying down in the formerly amorphous plasma of numerous filaments of the herring-bone type which are to become the fabric of the new basement lamella. Figure 2 represents the healing of a wound in an amphibian embryo. It shows that the reorganization of CDE occurs in an extracellular amorphous plasma under the influence of mobile contiguous living cells.

Figure 3 represents a three-ply helix of peptides composed of amino acids presumably with CO-NH peptide links containing the enzyme-like growth group sulpydryl. The nucleotides, ribo and deoxy-ribo nucleic acids are built on somewhat this same plan, and are related to intracellular nucleic endoplasms and mitochondriae.¹⁰ The build-up and break-down of these proteins within the cell presumably is brought about by enzymes that add or remove O and H ions, or transpose positive or negative electrons between these huge molecules. That fact that something of ions and electrons in the enzymes of peptides is known adds interest to their metabolism.²⁰ One of these enzymes whose molecular structure is well known is the vitamin nicotinamide that plays so important a role in building up nucleotides by binding together their phosphate molecules. It seems probable that this enzyme or possibly other related ones are absent or inactive in the lipidosed neurones.

Some such related enzymes may fail in the pyruvic or acetic acid cycles of the carbohydrates and the fatty acids in the neurones as they do in the muscles in diabetes and certain liver degenerations.²¹ These phospholipid proteins in certain types of cerebral neurones are undoubtedly the molecular focus for these familial diseases. It is noteworthy that the glial cells of the cortex escape, but like other types of connective tissue, proliferate. I have found the study of the thalamic ganglia on record,²² but none on the sympathetic or parasympathetic ganglia. The clinical histories I have studied suggest no degenerations exist in the sympathetic or vago-motor oculi ganglia or their fibers in the mid-brain.²³⁻³¹

We now know that genes, viruses, enzymes, vitamins and hormones have many common properties, but we do not know why some are also reversible in their actions and can break down or synthesize large carbon compounds. Some enzymes function as catalytic transformers of their special substrata, and others are consumed themselves in mediating special metabolism.

The simplest and most common of the hormones is carbon dioxide. It is the life of plants and animals, truly the universal tool in most living matter. It must have been present at the creation of the organic compounds. When it breaks down into O and C, it sets the world on fire and produces glittering diamonds.

Since mutant genes are responsible for all new ventures in living, it seems worthwhile to note how they function in fertilization. In the packaging of the human sperm and ova, each contains a specific number of chromosomes—namely, 48 in man. Before fertilization can occur both sperm and ova must divide reducing the number of chromosomes to 24. The potential hereditary pool of each matured gamete is thus reduced by half, to be doubled again to 48 in the new fertilization assortment, now half paternal and half maternal. This newly created personality now contains its full pool of genes, disposed in two parallel lines with each member paired off against its opposite number to complement it or to cancel it out. What appears in the child, then, may be a blend of two homologous traits, but what is more striking is that one of two opposite traits becomes recessive and is not evident. One observes that in such mutually exclusive features as sex, black or blue eyes, curly or straight hair, and eugenic health and dysgenic diseases, only the dominant one of each pair can appear in the first generation. The question then raised is what has become of the other ancestral trait. The question is simpler than the explanation. It has been segregated like the inactive sex chromosome for one generation, but it has a good chance of reappearing when it pairs off with an opposite chromosome in some later fertilization. Experimental geneticists are now able at will to increase many natural mutations and

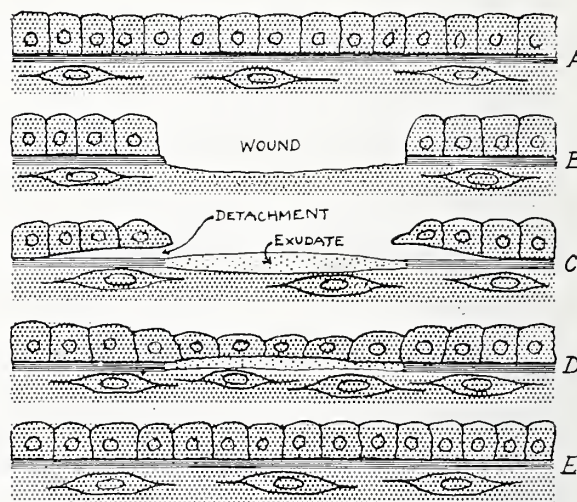


Figure 2. Diagrams to illustrate consecutive steps in the repair of a skin wound (see text). (Reproduced, with permission, from Weiss, P. A.: Compounding of complex macromolecular and cellular units into tissue fabrics. *Proc. Nat. Acad. Sciences*, 42:819-830, (Nov.) 1956.)

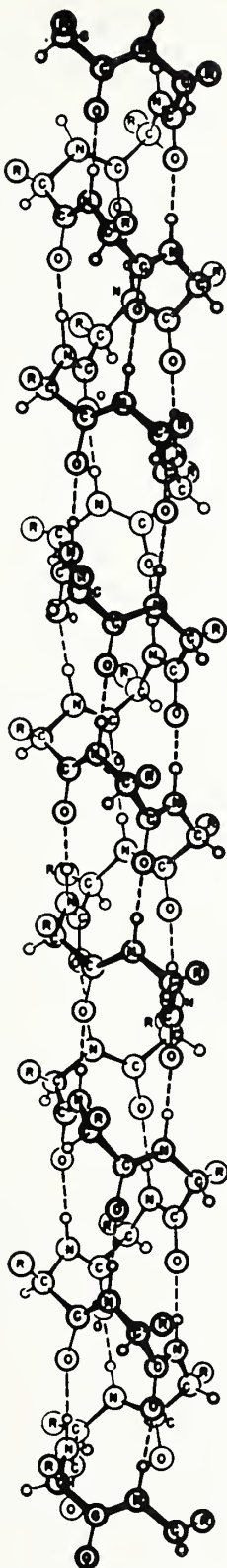


Figure 3. A three-ply α helix of peptides with 3.7 residues per turn. (Reproduced through the courtesy of Dr. Paul Doty, of Harvard.)

indeed initiate many new ones in some of the lower forms of life. By inbreeding these, generation after generation, and by tabulating data on those that improve, survive, breed true or die, they can deduce results conforming with Mendel's laws of heredity and add to our knowledge of the hereditary diseases of human beings.

The studies of the histories of the two families here discussed covered about 180 persons of both sexes through four generations, but gave no hint that any of them were carriers of the pathogens in question. The reason was that the pathogens remain latent until they meet with and complement like pathogens.

So far, no laboratory tests have been devised such as those employed for detecting Rh carriers,³⁶ and the Iowa statistics show no deaths from either of these diseases during the past 10 years. In Sweden, the frequency of children born with the Tay-Sachs disease is said to be about four per million.⁵ If this ratio obtains elsewhere, the chances, according to the Hardy-Weinberg formula, are that about 10 are born annually in Iowa. It is probable that many of them die before a diagnosis has been made.

The Biochemistry of the Lipidoses. About 200 years ago, the distinguished philosopher David Hume declared that man can never sense reality—that all he can ever know is the fantasies of his experiences. If this is true of the material world, how much more true is it with respect to what goes on within man's self and his fellows. Thus it is with a feeling of wonder that the reverent physician approaches the phenomena of life and its diseases.

Physical man consists mostly of emptiness. The little substance that he contains besides water and gases consists of a few atoms and several large protein molecules suspended as colloids. Most of this stuff in the body exists as plasma, some of which is organized into the reticulum of cells, and others as hormones, vitamins and enzymes. The striking feature about them all is that they seem to have an awareness of their surroundings and are able to learn and to remember as long as they remain alive.³³

It is generally believed that at least the intracellular metabolism of these compounds is controlled by the nuclei of the cells that contain them, since this organ must be preserved intact for injured protoplasm to survive and resume its normal functions. This is particularly true of neuron plasma, the cells of which are so highly specialized that they cannot reproduce themselves as most connective tissue can.

It is beyond the scope of this paper to discuss the biochemistry of these neurons as concerns their health and disease. We may be sure that the metabolism of the nucleotypes, the lipids and probably the carbohydrates is disturbed in these diseases. Their degeneration probably involves

specifically the ribo-nucleic acid so intimately related to the neuroplasmic granules and mitochondrias.³⁴

It is well known that when a lipoprotein dies the fat compound breaks down at its double carbon bonds, even though it remains free from bacterial contamination. These degradations occur in both intracellular and intercellular plasma lipids by hydrolysis alone, when tissue respiration ceases. The local inflammatory reactions and the general toxic symptoms seem to indicate that short-chain anaerobic lipids parenterally absorbed are metabolically poisonous.

A striking example of this is seen in hemorrhagic pancreatitis, where the victim often succumbs from autolytic intoxication. Recent studies on the narcotic and convulsive effects of the intraperitoneal injection of short-chain lipids in rats seem to confirm this clinical observation.¹³ It is not yet certain that the lipids, essential for the internal metabolism of cells, can be synthesized from carbohydrates or proteins, particularly those whose chains contain more than four double bonded carbons. A good discussion of the chemistry and metabolism of the essential fatty acids may be found in numbers 18 and 21 of the references listed with this paper.

More than 10 years ago, Rental demonstrated that the chemical composition of lipids in the tissues could not be determined by selective staining methods because several different lengths of carbon-chain fats were often combined in the same cell or tissue.⁴¹ Quite recently, minute plano-concave basophil bodies have been discovered in the nuclei of neurons in man and several other animals. The fact that they are five or six times more frequently found in female than in male cats is of special interest to geneticists and cytologists. Whether these so-called Sonne cells evidence mutant forms of genes or chromosomes or are inclusion forms of viruses seems uncertain.⁴² One may reasonably expect that electron microscopic modalities which now surpass the magnitude of the larger molecules will soon resolve some of these mysteries.

By the use of radioactive isotopes such as ³²P, ¹⁴C, ¹⁵N and ¹³¹I, the well trained biochemist may be able to follow serially the carbon positions in the phosphates, the carboxylic acids and the amino proteins from glycine (C1) to the thyroxine hormone (C14), the latter of which can be traced with radioactive isotope ¹³¹I.¹⁰ With such achievements at hand, specially disciplined research chemists may already have taken the first step toward discovering what is going on in the neurons of these handicapped babies.

Fractional analysis of the brain cortex in these diseases has shown that there is an excess of a specific galactoside present in Tay-Sachs disease; a long carbon chain sphingomyeline in the Niemann-Pick disease; and an excess of some yet un-

determined lipid in the Spielmeyer-Vogt disease.³⁶ The direct therapy, it seems, must be aimed at these undegraded compounds.

The National Institute of Health has recently published a paper on the chemical steps involved in the enzymatic formation of inositol phosphatids.³⁷ In its molecular configurations, this lipoalcohol is closely related to the adanosin phosphates (ADP) and the ribo-adanosine nucleic acids of the cytoplasm. The Hospital for Chronic Diseases, in New York, and St. Christopher's Hospital for Children, in Philadelphia, are currently engaged in research on the lipid diseases, but I have not yet seen any of their reports.

Through the courtesy of the Army Medical Museum at the Walter Reed Hospital, in Washington, D. C., I have been able to study the microscopic sections of two cases of this disease. Dr. C. B. Courville, of the Los Angeles County Hospital, has allowed me to study slides of a recent Tay-Sachs case, and has given me the brain for further study.³¹

The reader may now ask whether this paper imbodyes a series of abstractions, or deals with some matters of fact. My answer may not be conclusive. I have undertaken neither to explain the disease nor to advance a hypothesis regarding its prevention or cure. I have been most concerned with depicting a diorama in which the interested reader will not become lost and in which workers with special disciplines may find their orientations. For the consolation of the clinician, I have endeavored to stress the fact that the chief concern of nature is always to heal its diseases. Remember that a baby draws his first breath just before he suffocates; that in hyperinsulinism, shock convulsion pays off by squeezing the last drop of glucose out of the muscles; and that the muscular tensions of demise are but physiological reflexes. In this age when pharmacology seems more concerned with suppressing symptoms than in understanding their physiology, it is well for us to consider seriously what effect these indiscriminate dopings may have on the health and any future diseases of the individual.

The problems which concern the lethal hereditary lipid diseases may be considered under the headings of genetics, pathology, physiology and treatment. Under genetics, the physician should learn whether the mutant pathogen occurs in other species than man; whether there is a relationship between the parents' blood groups and that of their healthy and their afflicted children; and if so, whether there are evidences of the presence of antibodies in the plasma or tissues of those who do not develop the disease. The fact that each of the parents has a half-dose of the pathogen but escapes the disease suggests that he or she may have developed some antibody against it.

The systems, organs and cell type degeneration

in the lipidoses suggest that the pathogens—whatever their nature may be—have at first a special avidity for neurons, but later involve the reticulum cells of the mesenchyme tissues, particularly in the liver and the spleen. I believe that the whole gamut of ganglionic neurons in the central and sympathetic nervous system should be re-studied for any evidence of degeneration, preferably at electron microscopic magnifications.

The new physiology of these diseases should embody the total metabolism of the infant. This should not be difficult with appropriate calorimeters. Such well-established modality patterns as encephalograms, ultrasonic vibrations, and central and sympathetic stimulation by adrenergic and cholinergic hormones or pharmaceuticals may be revealing and may prove useful as symptomatic remedies.

Some of the chelates may be worthy of trial. They proved themselves during World War II in neutralizing a few poisonous minerals and gases.³⁸ Fortunately, the brain is located so that it can be reached by direct radiation, through the venous and arterial circulations and the cerebrospinal routes. Such agencies as nicotinic acid and other vitamin-like enzymes and the hormone insulin, all of which are able to transcend the blood-brain barrier, may be useful.³⁹

The marvelous effects of blood depletions combined with carefully controlled transfusions in the Rh gene erythroblastosis make one sure that this should have a trial in the hereditary lipodistrophies. A recently heralded methyl-phenyl diamine plasma test for mental diseases⁴³ makes one hopeful that some chemical or immune body reaction may be discovered that will reveal the presence of these diseases at birth and possibly in carriers of their pathogens.

SUMMARY

New genes, as well as pathogens, appear in the bioplasm of man with about the same chance frequency that they do in most other bisexual mammals. When a pathogen is lethal before sexual maturity, its mutational frequency approximates its death rate. Bisexually transmitted recessive genes cannot be demonstrated in carriers, and are not pathogenic for the zygote personality until paired off in fertilization with fellow complement pathogens.

The pathogen of the lipodistrophies is zymotic in its action and seems to degrade phospholipid compounds in the cerebral neurons. In the later stages of these diseases, the degenerations extend to the reticulo-endothelial system of the viscera, and the patient succumbs to a lipid toxicosis rather than to the disease that he has inherited.

The pathology of lipidosed cells should be re-studied at the electron microscope level. If future autopsy studies reveal lipid degeneration of sympathetic neurons, these may be biopsied for diag-

nosis. The lipid, phosphatase, protein and globulin fractions of the blood plasma and the cerebrospinal fluid in patients with this class of disease should be thoroughly studied, particularly with respect to their possible response to insulin, ACTH and nicotinic acids.

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Clinico-Pathological Conference Report

Mercy Hospital, Des Moines

CLINICAL HISTORY

Mrs. M. A. K., a 56-year-old white woman, was admitted to Mercy Hospital, Des Moines, at 3:45 a.m. on June 28, 1958, and died at 6:55 a.m. that same day.

Chief Complaint. Weakness, nausea and vomiting had been present intermittently for nine years.

Final Illness. At approximately 8:30 p.m. on June 27, 1958, she was working in her garden when she had a sudden onset of weakness which was most marked in her lower extremities. Her husband brought her into the house and placed her on a sofa. Since she had had similar episodes before, neither the patient nor her husband was especially concerned about the attack. She lay on the sofa and watched a television program from 9:30 to 10:00 p.m., and then because the weakness continued, she went to bed.

She was unable to sleep, and the weakness became so marked that it was difficult for her to speak. Approximately at midnight, she developed nausea and vomiting. At 2:00 a.m., the family physician was called, and he arrived within a few minutes. On his arrival, she was in shock, her blood pressure was unobtainable, and her pulse was weak and thready. Heart tones were audible, but were weak and distant.

Adrenalin 0.5 cc. was administered, and she was taken immediately to Mercy Hospital by ambulance.

Past History. The patient had been in good health until 1942, when she was seen at the Mayo Clinic complaining of menorrhagia and metrorrhagia. Her blood pressure was 110/68 mm. Hg., and the physical examination was essentially negative. Dilatation and curettage was performed. Histologic examination of the endometrial scrapings revealed no significant abnormalities.

In August, 1949, on an automobile trip to California with her husband, she developed a very pronounced tan that was thought unusual by both

the patient and her husband, for she had had only slight exposure to the sun.

At about the same time, she began to complain of fatigue, but it was thought to be the residual of a spontaneous abortion that had occurred in March, 1949. The weakness continued and became more pronounced in the summer of 1950. The pronounced tanning of the skin that the patient had acquired the previous year also persisted, and the pigmentation of her skin increased in intensity.

In 1950, she developed recurrent episodes of hiccoughs. She returned to the Mayo Clinic because of the pigmentation and weakness. Her blood pressure as recorded on two occasions during this visit was 100/72 and 80/60 mm. Hg. Deep pigmentation was present particularly over the exposed surfaces, the creases of the hands and the pressure areas, and there was diffuse pigmentation of the buccal mucosa, and focal areas of dark pigmentation were noted. On her body, several heavy black freckles were also demonstrated—ones which she had not previously noted.

Extensive laboratory studies were performed at the Mayo Clinic in October, 1950. The hemoglobin at that time was 12.2 Gm., and the white blood cell count was 7,200, with 40.5 per cent lymphocytes, 48 per cent neutrophils, 7.5 per cent monocytes and 4 per cent eosinophils. Blood chemistry studies revealed blood chlorides 93 mEq/L (normal 98-106); carbon dioxide combining power 20.9 mEq/L (normal 23-31); sodium 103 mEq/L (normal 135-145); potassium 6.1 mEq/L (normal 3.8-5.3); and blood urea nitrogen 46 mg. per cent. An examination of the urine for 17-ketosteroids revealed an excretion of 1.6 mg. per cent in a 24-hour period (normal 5-18 mg. per cent per 24 hrs.). A Robinson-Kepler-Power water test was performed. The largest day volume was 45 cc., and the largest night volume was 335 cc.

X-rays of the chest and abdomen were performed. The x-ray of the chest revealed no pul-

monary lesions. No abnormal calcifications were noted on the flat plate of the abdomen.

The patient was placed on steroid therapy at the Mayo Clinic and was sent home on continuing therapy. She continued to have episodes of weakness, nausea and vomiting which were similar to those noted in 1949 and 1950. These episodes were periodic, and they were more pronounced in warm weather than in cold. During the episodes, weakness became so profound that it was difficult for the patient to speak. The attacks usually lasted from one to six hours.

She returned to the Mayo Clinic periodically for observation. The records there indicate that she felt better after steroid therapy was begun. Her blood pressure was consistently in the low to low-normal range, and the blood chemistry studies revealed low serum sodium levels, with occasional elevations of the potassium level. The blood chlorides were consistently normal. The blood urea nitrogen returned to normal levels at the institution of steroid therapy, and remained normal.

Her last visit to the Mayo Clinic occurred in 1954, at which time she developed a severe emotional disturbance which was superimposed upon the periodic attacks of weakness. A diagnosis of psychosis related to her underlying disease was made, and the same treatment was continued.

In April, 1956, the patient developed severe psychotic symptoms which lasted for three months. These were severe enough to require hospitalization in a psychiatric hospital. The attending psychiatrist made a diagnosis of catatonic schizophrenia. Her blood pressure during the height of this illness was recorded as 130/80 mm. Hg. Urinalysis revealed a trace of glucose and a trace of albumin. The fasting blood sugar was 74 mg. per cent. The blood count was within normal limits for her age. After three months, the psychosis disappeared, and the patient returned to her home.

The last significant attack of weakness, nausea and vomiting previous to the final episode was one that occurred in March, 1958, and it lasted for only a few hours.

Social History. The patient was a housewife and the wife of a physician.

Family History. The patient's mother died at about 50 years of age. She was a dark complexioned woman, and she died within a few hours after the onset of her terminal illness, but no further details are known. It was thought at the time of her death that she probably had some type of heart disease.

Physical Examination at Mercy Hospital. The patient's blood pressure was 120/90 mm. Hg., her pulse was 76-80 beats per minute, her respirations were 20, 26, 24 per minute and her temperature was 98.6°F.

Physical examination revealed a well-developed, well-nourished but apprehensive white female who

had apparently recovered from the acute attack that had occurred earlier in the evening. She was well oriented and able to talk with the attending doctor and the nurses. Within a few minutes, however, she again complained of marked weakness, and her blood pressure dropped to 80/70 mm. Hg.

Physical examination revealed no other significant changes except the diffuse pigmentation of the skin and mucous membranes, and hypotension and marked weakness of the muscular system, especially marked in the extremities.

Clinical Course. At 4:05 a.m., 20 minutes after admission, the patient's blood pressure was 100/70 mm. Hg., and her pulse was 80. She complained of numbness in the hands and feet, in addition to her weakness, and there was marked trembling of her entire body. At 4:20 a.m., her blood pressure was 120/70 mm. Hg., and the trembling had ceased. Her pulse became stronger, and the numbness of her hands and feet disappeared. Fifteen minutes later, the numbness was again present. She was given supportive therapy, and by 5:10 a.m. she was able to drink some coffee. She then went to sleep and slept for about an hour, but when she awakened, at about 6:15 a.m., she complained of pain in the extremities and severe weakness. At that time, her blood pressure was 98/70 mm. Hg. Supportive therapy was continued. At 6:20 a.m., her blood pressure dropped precipitously, and medication to raise it was ineffective. She expired at 6:55 a.m., June 28, 1958, approximately three hours and 10 minutes after admission.

CLINICAL DISCUSSION

Dr. Neil J. McGarvey: The case under discussion is that of Mrs. M. A. K., a 56-year-old white woman who was admitted to the hospital at 3:45 a.m. on June 28, 1958, and died approximately three hours later.

Her past history and her final difficulties revealed an illness associated with recurrent episodes of severe weakness. These episodes had occurred over a period of nine years, and had sometimes been associated with nausea and vomiting. She was the wife of a physician, and thus can be supposed to have had the benefit of careful medical attention.

Her family history does not appear to be particularly informative. The facts that her mother was similarly dark complexioned and died suddenly may or may not have been significant. I am not sure.

This patient was first seen at the Mayo Clinic at the age of 40 years, complaining of menstrual difficulties. Following a dilatation and curettage, she was apparently in good health until 1949. At that time she had a spontaneous abortion, from which she recovered without difficulty except for weakness.

The first evidence that we have of significant

illness in this patient occurred while she was on a trip to California during the summer of 1949. At that time, she developed some unusual tanning of the skin which was not associated with significant exposure to the sun. About the same time, she began to complain of severe fatigue. Also, apparently, she continued to have menstrual difficulties.

The weakness was periodic, and was associated with nausea and vomiting. About the same time, she also developed intermittent episodes of hiccoughs.

She returned to the Mayo Clinic, where a detailed examination was performed. On one occasion while at the Mayo Clinic, hypotension of 80/60 mm. Hg., was noted. Deep pigmentation was seen to involve the skin, especially in exposed areas and over the pressure points. The buccal mucosa also showed marked pigmentation.

Included in the examination was a study of the blood and urine, and some other laboratory procedures and some x-ray studies. It is interesting to note that no anemia was present. There was mild lymphocytosis and a borderline eosinophilia. The blood sodium and the blood chlorides were depressed, and the blood potassium level was elevated. The blood urea nitrogen was also elevated. The excretion of 17-ketosteroids in the urine was markedly depressed.

No reference is made in the protocol to a blood-sugar examination, and thus we must conclude that none was performed. There also is no reference to an electrocardiogram.

X-rays of the chest and abdomen were performed. The x-ray of the chest was apparently normal, although no specific reference is made to cardiac size. X-rays of the abdomen revealed no significant areas of calcification.

Included in the laboratory studies was a Robinson-Kepler-Power water test which gave a result indicating adrenal insufficiency. This test is usually given to patients who are suspected of having Addison's disease. Excretion of urine is measured from 10:00 p.m. until 7:00 a.m. at hourly intervals, and the total volume is recorded. The next specimen is then discarded, and the patient is given approximately 20 cc. of water per kilogram of body weight. Then hourly measurements of the urine volume are taken during the succeeding four hours. The test is within normal limits if the total volume of one of these hourly specimens exceeds the total night volume. The results of the test performed upon this patient under discussion tonight would certainly be indicative of adrenal insufficiency.

Following that examination at the Mayo Clinic, the only comment made regarding treatment was that the patient was placed on steroid therapy. The type of steroid therapy was not identified, so we must conclude that information has been deliberately withheld to avoid pinpointing the diagnosis.

The rest of the history is extremely interesting because of the intermittent episodes of weakness, nausea and vomiting that occurred over the following eight years. These episodes were extremely variable as to their occurrence. Apparently, there were long periods during which she had no episodes. It has been stated, however, that they occurred most frequently during warm weather.

She had several follow-up examinations at the Mayo Clinic. During some of them, her potassium level remained elevated, and the chloride and sodium levels were depressed. Thus, apparently, she had episodes of hypotension.

In 1954, she had a psychiatric illness, and in 1956 she had a severe psychiatric disturbance that required hospitalization for approximately three months. Complete recovery apparently occurred, however, although the attending psychiatrist at the time made a diagnosis of catatonic schizophrenia. These episodes of psychiatric illness are quite significant to us as we attempt to arrive at a diagnosis in this patient, for individuals with adrenal insufficiency are very susceptible to psychiatric disturbances.

We do not know whether this patient was cooperative or not. For example, we do not know whether she took her steroid therapy regularly. We must assume, however, that since her husband was a physician he saw to it that she took good care of herself.

No statement is made about therapy during her psychiatric illnesses, except for the statement that her steroid therapy was continued.

The terminal illness developed very suddenly, and in its earlier stages was apparently very similar to many other episodes which she had had. I presume that these episodes had occurred so frequently that neither she nor her husband was concerned about them. At any rate, she was apparently in good health until about 8:30 on the night of her admission. Following a period of improvement, she developed severe shock, was sent to the hospital, and after a stay of approximately three hours, during which she received supportive therapy, she died.

The physical examination revealed hypotension, marked pigmentation, severe weakness and marked apprehension. The patient's speech was affected to some extent, and she talked slowly at times, though clearly enough to make herself understood. Because of her fluctuating blood pressure at this time, management of her case must have been quite confusing.

The clinical diagnosis in this patient would appear obvious. In fact it is so obvious that I am hesitant to make it. The patient is a classical case of Addison's disease. Better than 90 per cent of such people have pigmentation, anorexia and nausea, and about 75 per cent have periodic attacks of vomiting. Approximately nine out of ten patients with Addison's disease will have crises,

but the course may nevertheless be very prolonged.

The weakness deserves special recognition, for it may be so mild as to resemble physiological fatigue, or so severe as to render the patient unable to move. The weakness is not limited to one portion of the body, but involves the muscular, circulatory and nervous systems. The voice may become very soft and low in volume. Mental fatigue may precede other symptoms, but it is soon associated with muscular weakness. Pains, which are dull or paroxysmal, may be present in the back, abdomen and legs. Muscle cramps may be very severe.

In Addison's disease, the skin becomes soft, smooth and dry. The most striking change noted in the skin is that of pigmentation. Frequently the first indication of abnormal pigmentation is the failure of a sun tan to disappear during the winter months. A great range in the color of the skin may be present. Occasionally, shades of olive and gray may appear. The abnormal pigmentation of the skin is most marked in the regions exposed to sunlight, and the creases of the palms and soles may be colored, but otherwise the palms are usually not involved. The face, the neck and the backs of the hands are most often pigmented. Pigmentation may also be noted about the genitalia, the axillary folds and the arms. And in women, the areolae may be heavily pigmented. Pigmentation is also pronounced at pressure points like the knees and the elbows.

Disturbances of sexual function are usually present in women. Dysmenorrhea and menorrhagia or amenorrhea may occur. It is possibly significant that this woman's first symptom was a disturbance of menstrual function. We do not know with certainty whether this was associated with Addison's disease or not, but it seems quite possible that it may have been.

Variations in blood pressure are well known, so I shall not dwell upon them. The basal metabolic rate is usually within normal limits, although it may occasionally be depressed. Disturbances of carbohydrate and protein metabolism may occur. The blood sugar is usually low, and the glucose tolerance curve is flat.

Renal function is impaired, usually with a decrease in urea clearance and an elevation of the blood urea nitrogen. The specific gravity of the urine may be low. Albumin and casts are not uncommon.

Disturbances of electrolyte and water balance are almost always present. The findings which usually are observed are well illustrated in this patient—a decrease in the sodium and chloride levels and an increase in the potassium level.

The differential diagnosis in this patient lies between Addison's disease and hypopituitarism, hemochromatosis and myxedema. The findings are so characteristic of Addison's disease that I find it difficult to give consideration to the other pos-

sibilities. Hypopituitarism is usually associated with emaciation, and pigmentation is not so striking as in Addison's disease. It is true that Simmonds' disease occurs in younger women, and evidences of emaciation and loss of appetite are much more marked.

Hemochromatosis is a disease which is associated with abnormal pigmentation of the skin. Diabetes is usually present, however, and there is enlargement of the liver. This woman was examined repeatedly, and no reference was made to hepatomegaly. Patients with hemochromatosis likewise do not have these episodes of weakness and these disturbances of the water and electrolyte balance. Also, hemochromatosis occurs only rarely in women.

Myxedema, we mention only in passing. Myxedema is not associated with pigmentation, and the mental lethargy and subcutaneous edema which are so common in myxedema apparently were not present in the patient under discussion.

One other disease probably should be considered—pellagra. Pellagra may be associated with unusual pigmentation of the skin, and it may also be associated with emotional disturbances. Pigmentation is not usually present in the mouth, however, and the disturbances of water and electrolyte balance are not so prominent.

Acanthosis nigricans, likewise, should be mentioned in passing. But its clinical picture is nothing like that observed in the patient under discussion.

I am forced to conclude, therefore, that this patient had Addison's disease. A diagnosis was apparently made on her first visit to the Mayo Clinic in 1950, and steroid therapy was begun at that time. Her course from then until her death was punctuated with these periodic crises. Her last illness was an acute crisis that proved fatal.

Dr. Ralph E. Hines: Thank you, Dr. McGarvey. Is there anyone else who would like to discuss this case?

Dr. E. Thomas Scales: Some patients with Addison's disease who are not very well controlled may be triggered into a crisis by exertion such as this woman was apparently undergoing while working in her garden. I am inclined to agree with Dr. McGarvey that this patient had Addison's disease and that she died in acute adrenal crisis.

Dr. E. R. Posner, Jr.: The information given us is certainly suggestive of Addison's disease, but I am not sure as to the mechanism of death. It was probably an acute adrenal crisis.

Dr. Hines: The autopsy findings will be presented by Dr. Resinger, the senior resident in pathology.

Dr. Harold E. Resinger: Autopsy revealed a well nourished, well developed white female whose skin showed a generalized bronzing. This abnormal skin color was more intense at the angles of the mouth, beneath the lower lip and around the neck down to the clavicle. There was increased pigmentation of the forearms and the antecubital

fossae on the knees, and on the lower legs and the dorsal aspect of the feet. Pigmentation was minimal or absent in the protected areas such as the axillae, beneath the breasts and in the labial and popliteal regions. The areas of deepest pigmentation were, in general, the exposed ones.

The heart was moderately small. An interesting gross finding was the rise of the left descending anterior coronary artery and the left circumflex coronary artery from separate ostia in the sinus of Valsalva. Two separate ostia were present in the right coronary artery also, but these led into a common trunk vessel. There were no gross abnormalities of the lungs or liver. Two accessory splenic nodules were present in the hilar area of the spleen. The renal capsules stripped with slight difficulty revealing a very granular surface.

The renal cortical thickness was mildly diminished. An examination of the region of the upper poles of the kidneys was carefully made in a search for adrenal tissue. None at all was found on the right side. On the left side, one small nodule of tissue was found, weighing 0.5 Gm. The average combined normal weight of the adrenal glands is 12 Gm. This means that the patient had approximately 4 per cent of the normal amount of adrenal tissue. The previous clinical diagnosis—Addison's disease—was confirmed on the basis of the gross autopsy findings.

Microscopic examination of the adrenal tissue from the left side revealed marked destruction of normal architecture. Lymphocytic infiltration was present. No medullary tissue was found. Some of the adrenal cells showed markedly bizarre morphology with atrophy, and the very rare finding of nuclear inclusion bodies was noted. The thyroid gland seemed normal on gross examination, but microscopically it showed areas of marked lymphocytic infiltration, with actual lymphoid follicle formation. These areas alternated with areas of relatively normal thyroid tissue. This finding, incidentally, is not uncommon in Addison's disease.

The heart contained areas of myocardial degeneration. The muscle fibers also showed increased lipochrome pigmentation in the bipolar position

next to the nucleus. This is a regular finding in Addison's disease. Sections of the skin showed increased deposition of pigment in the basal layer. It was 100 per cent melanin pigment, which can be distinguished from the pigment in hemochromatosis, the latter being a partially hemosiderin pigmentation. Associated findings included bilateral apical pleural scarring, mild pulmonary congestion, mild abdominal vascular congestion, mild chronic pyelonephritis and mild generalized arteriosclerosis.

DISCUSSION OF ADDISON'S DISEASE

Addison's disease is an ailment of adult life having a peak incidence in the third and fourth decades. However, 59 cases have been reported in children less than 15 years of age, and 12 of these were in children less than 10. The sex incidences are about equal. The over-all incidence is about four cases per 1,000,000 population. The onset is usually insidious, as it was in the patient under discussion.

Formerly, the prognosis was poor, but steroids have greatly improved the day-to-day life of such patients and cut down the numbers of crises.

The management of adrenal crisis is difficult, and cases that are secondary to adrenal tuberculosis have a worse prognosis than have those with other etiology. Tuberculosis of the adrenals formerly was the main etiologic factor in Addison's disease, and up to approximately the middle of

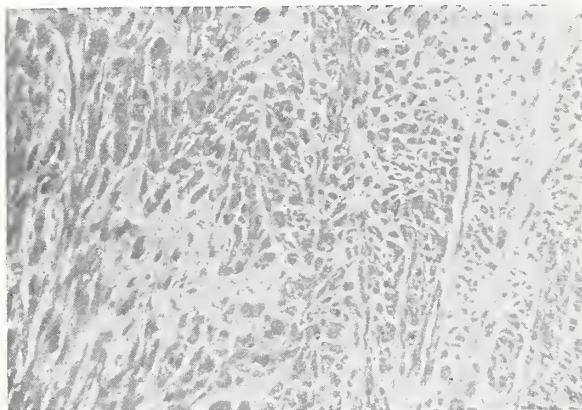


Figure 1. Myocardium x100. Focal areas of fibrosis which occur in Addison's disease.

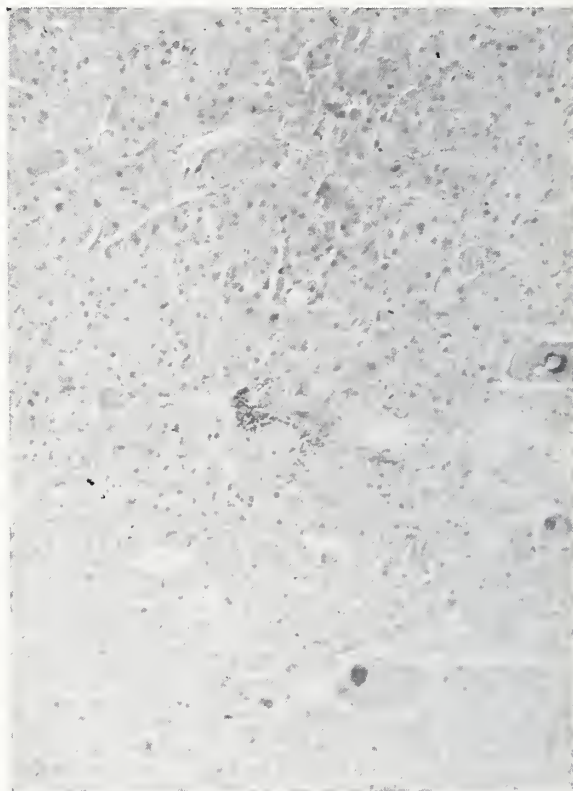


Figure 2. Adrenal gland x100. Lymphocytic infiltration in Addison's disease.

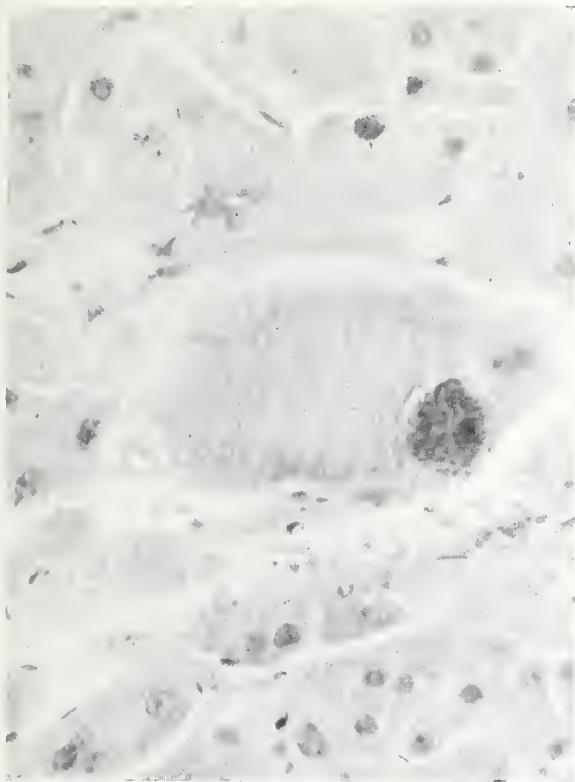


Figure 3. Adrenal gland x450. Bizarre cortical cells in Addison's disease.

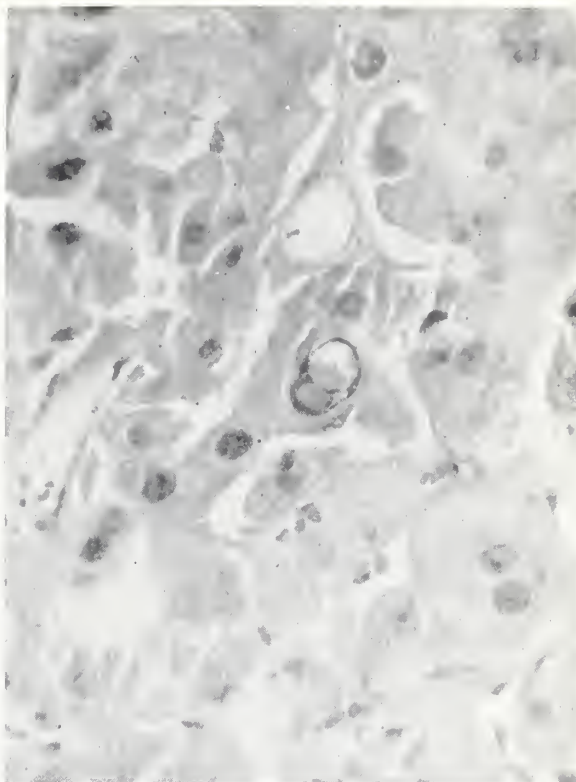


Figure 4. Adrenal gland x450. Nuclear inclusion in a cortical cell in Addison's disease.



Figure 5. Thyroid gland x100. Lymphocytic infiltration in Addison's disease.



Figure 6. Skin x100. Pigmentation in basal layer of epidermis in Addison's disease.

the 1930's, it accounted for about 80 to 90 per cent of the cases. The improved individual and epidemiologic control of tuberculosis has changed this picture, and at the present time, idiopathic atrophy is the most common finding. Uncommonly, the symptoms are produced by metastatic neoplasms, amyloidosis and other infectious agents, especially histoplasma.

The signs and symptoms of Addison's disease are:

- (1) Weakness
- (2) Hypotension
- (3) Weight loss
- (4) Pigmentation of the skin and mucous membranes
- (5) Gastrointestinal, metabolic and neuropsychiatric disturbances
- (6) Adrenal crises.

Hypotension, weight loss and pigmentation are usually constant, and become amplified during crises, at which time any or all of the other findings may become apparent.

About one-third of patients complain of abdominal pain at some time in the course of the disease. Rogoff's sign—costovertebral angle tenderness—is fairly frequent. Anorexia is a very constant finding, and gives way to nausea and vomiting during exacerbations. Food idiosyncrasies, which the patient attributes to a "sensitive stomach," often prompt GI studies and sometimes abdominal surgery in the early phase of the disease when its true nature hasn't yet been realized.

The neuropsychiatric disturbances may be striking, or they may be so mild as to escape detection. These may consist of drowsiness, loss of ability to concentrate, restlessness and irritability, acute episodes of disorientation and delirium, depression, dizziness, and patchy areas of paresthesia and anesthesia. Some of these findings may be mistakenly considered primary disorders, but 24 to 48 hours of corticoid therapy produces dramatic improvement. It must be remembered that cortisone itself in a patient under therapy can cause psychic disturbances, neuropathic conditions and shock in a case of cortisone sensitivity, and it also further aggravates the adrenal atrophy.

The deficiency in adrenal steroids results in loss of sodium and chloride, causing low blood levels and high urine levels. In consequence, a decreased potassium excretion causes hyperkalemia. These, in turn, cause loss of body fluids, with decreased plasma volume, increased hematocrit and red-cell count, and increased oxygen capacity. The dehydration results in increased serum proteins and decreased circulatory minute volume, which perhaps accounts for the progressive impairment of adrenal function as well as the increasing NPN and BUN, the final circulatory collapse and the development of shock.

The 17-ketosteroid excretion level is lowered. This is not pathognomonic of Addison's disease, however, since it is also found in numerous debilitating diseases. A normal 17-ketosteroid excretion will, however, rule out Addison's disease.

Adrenal crises may occur spontaneously, or they may follow infections or other physical or psychic trauma. They are most common in hot weather, when any heat aggravates the condition of the already dehydrated patient. The earliest symptoms are anorexia, vomiting, asthenia and lethargy.

There may be severe abdominal pain or back pain. The legs may be painful, or they may be subjectively and objectively cold. Hypotension develops, and the urinary output decreases. Coma may appear, or the patient may be so weak as to find talking very difficult—the condition reported in the patient whom we have been discussing tonight.

Addison's disease must be distinguished from malignancy, hemochromatosis, hyperthyroidism, pernicious anemia, melanoma, scleroderma, acanthosis nigricans, ochronosis and vagabond's disease. I wondered what vagabond's disease was, so I looked it up. It is caused, it seems, when lice have injected an irritant material under the skin. The resultant scratching produces a deposition of melanin.

The four-hour ACTH test fails to show 50 per cent fall in the circulating eosinophils which are normally present. The 48-hour ACTH test—also known as the Thorn test—not only fails to show eosinopenia which one normally would expect, but also fails to show the normal increase in 17-ketosteroid excretion. The water-loading test of Robinson, Kepler and Power shows delayed diuresis in most cases. Urinary sodium and chloride are increased, and potassium is decreased, though the opposite is true in serum. There is a flattening of the glucose tolerance curve, due partially to poor intestinal absorption. There are other facets to the carbohydrate abnormalities, partially because of an increased sensitivity to insulin, so that when these patients are given oral glucose they fail to show a significant rise in blood glucose. If glucose is given them intravenously, they may show a rapid increase to a rather high peak, but two or three hours later they fall back to hypoglycemic levels. The hypoglycemic levels are considerably less than the low fasting level had been at the beginning, and incidentally, a crisis may thus be precipitated.

The salt-withholding test of Kepler-Power-Wilder shows a continued excretion of salt in the face of low intake. Now this is a very, very dangerous test, since it too may precipitate a crisis, and it should be undertaken only when other methods have failed to clarify the diagnosis.

Skin biopsy reveals increased melanin pigmen-

tation. Skin biopsy can be used in differentiating this condition from hemochromatosis, although there are other methods of doing it. Hemochromatosis will show typical iron deposits, with the use of an iron stain.

Uric acid levels are increased in renal dysfunction before creatinin levels are increased, suggesting that the kidney is not so capable of excreting uric acid as it is of excreting creatinin, and this is an indicator of impending renal insufficiency.

Even though steroid therapy has lessened the speed of the progressive downhill course that used to be seen, these patients are subject to crises which may be fatal even when they are under therapy. They have to be protected from stress and strain, but there is a bright outlook for them, for though in 1930 only about 19 per cent of them survived for three years, at the present time 40 per cent can be expected to survive for 10 years.

Dr. Hines: Thank you very much, Dr. Resinger. I shall now discuss the x-ray findings.

X-RAY FINDINGS

The roentgenologic findings in cases of Addison's disease are rather sparse. As was mentioned in the protocol, calcifications are sought for in the adrenals. They are not always found, however, and their absence does not diminish the possibility that the disease is present. When they are found, they are of diagnostic significance.

In addition, there is occasionally a diminution in the transverse diameter of the heart. This is not accompanied by the flattening of the domes of the diaphragm that one sees in an emphysematous chest. An emphysematous chest may be present as a part of emphysema, and a decreased cardiac size due to the pulmonary pressure. In this case, however, the domes of the diaphragm were depressed.

In the cases of Addison's disease that I have seen, the cardiac shadow was small, but the domes of the diaphragm were up at normal levels.

Final Diagnosis: Addison's disease, with death due to acute adrenal crisis.

State University of Iowa College of Medicine Clinical Pathologic Conference

SUMMARY OF CLINICAL FINDINGS

A 22-YEAR-OLD MAN was involved in an accident while driving a pickup truck at 7:00 one evening. He was found on the ground with the truck resting on his chest. After first aid had been given to him at the scene of the accident, he was sent to University Hospitals, and arrived there at 10:15 p.m. His only past history of significance were several spells of blueness that he had had as a baby, and some recent cyanosis of the lips and nailbeds on physical exertion.

On admission, he was well oriented and not in acute respiratory distress. His blood pressure was 100/80 mm. Hg. His pulse was thready, and the rate was 90 per minute. He had marked cyanosis of the head and neck, many subconjunctival hemorrhages, and hemorrhages in the skin of the ears, and the mucous membranes of the nose, mouth and pharynx. There was some lag in chest movement on the left side, and tenderness over the left lower rib cage. The left border of cardiac dullness was at the anterior axillary line, the rhythm was normal sinus, and there was a grade IV harsh systolic murmur heard over the entire precordium and the neck. This was loudest in the aortic area. The abdomen was rigid. Tenderness was present in the left upper quadrant. No bowel sounds were heard. There was a superficial laceration from the posterior scrotal wall to the anal orifice. The right thigh was shortened and greatly swollen.

The urine was negative for sugar, albumin, blood and white blood cells. X-rays of the pelvis revealed multiple fractures of the pelvis and a transverse fracture of the right femur four inches above the knee joint. A cystogram showed that the bladder was normal. The hemoglobin was 16 Gm., the red count was 5,200,000/cu. mm., and the white count was 12,400/cu. mm. Chest x-ray revealed no evidence of rib fracture, but it indicated a mild cardiac enlargement, with prominence of the right ventricle.

The possibility of intra-abdominal bleeding was considered because of generalized abdominal tenderness, absence of bowel sounds and the need for two blood transfusions to correct shock. An exploratory laparotomy was started at 1:00 a.m. on the next day and took three hours. The peritoneal cavity was found to contain 200 ml. of blood. There was a rent in the mesentery of the terminal ileum, and this was closed by means of sutures. There was retroperitoneal hemorrhage in the region of the right acetabular fracture. At the time of the operation, the peroneal laceration was closed with sutures, and a pin was inserted through the right tibial tubercle so that traction could be applied to the right femoral fracture.

Postoperatively, the patient was restless and confused. His pulse was 92 and regular, and his blood pressure was 128/82 mm. Hg. The lungs were normal, and the heart was not enlarged to

percussion. There was a harsh, grade III systolic murmur, loudest to the left of the sternum in the 2nd and 3rd intercostal spaces. An electrocardiogram showed right ventricular hypertrophy and no evidence of myocardial infarction. At 11:00 p.m., the patient was quite restless. His tidal volume was measured at between 400 and 700 ml. His respiratory rate was 30 to 50 per minute, and his pulse rate was 150 to 200 per minute. Breath sounds were heard over the entire chest. An AP film of the chest with the patient in the supine position revealed cardiac enlargement and some haziness at the left base.

On the second postoperative day, the patient continued to do poorly. He was less responsive. His respiratory rate was 40 to 50 per minute, and his pulse rate was 120 to 140 per minute. His rectal temperature was 105°F. He responded only to painful stimuli. There was no evidence of a localized neurological disorder. His urine output remained adequate. He was treated with intravenous fluids, bed rest and Combiotic, 2.0 cc. twice daily. The patient died at 5:30 a.m. on the third postoperative day.

SUMMARY OF CLINICAL DISCUSSION

Dr. George N. Bedell, Internal Medicine: The patient for discussion today is a 22-year-old man who was reasonably well until he was involved in an automobile accident. He was thrown from the truck that he had been driving, and landed on the ground with the truck on top of his chest. He was given first aid near the site of the accident, and was sent to University Hospitals about three hours and 15 minutes later.

Dr. R. C. Hickey, Surgery: I think that this is a very good case to present because it brings accidents to our attention, and shows the importance of trauma in our current everyday lives. After cardiovascular and neoplastic diseases, accidents are the next most common cause of death. I note that each year the American College of Surgeons has a symposium dealing with trauma. Although two years ago the program was devoted almost entirely to simple fractures and similar topics, the subjects proposed for discussion this year center largely around major trauma to the entire individual—the sort of injury that occurred to the patient under discussion here today.

This particular type of accident is one in which there were multiple injuries, and thus there were multiple considerations involved in the care of the patient. This man had a crush injury of the chest—or at least an automobile fell on him. He had abdominal rigidity, and so attention must be directed to some catastrophic occurrence which might have taken place intra-abdominally. In addition, this man had multiple pelvic fractures, and these constituted a very severe type of bony injury. He had a femoral-shaft fracture and there was evidence of associated bleeding and shock. In addi-

tion, he had a special type of injury—that is, a scrotal tear extending back to the anal region. Attention must be directed particularly to this facet of the problem, so as, in particular, to determine whether there was a severance of the various muscles around the anal orifice and, perhaps, fecal contamination.

Before proceeding with the case at hand, I suppose I should make some mention of ways in which it might have been prevented. If this man had had a seat belt in his truck, and if he had had it fastened around him, he would not have been thrown out of the vehicle. Then, this type of accident would not have occurred. This man was 22 years old, and was presumably well while he was driving the truck. When admitted to the hospital at 10:15 p.m., he was alert and able to communicate lucidly and to give his past history. He was not in acute respiratory difficulty. His blood pressure was 100/80 mm. Hg., but his pulse was thready. With a thready pulse, a pulse rate of 90 per minute and a blood pressure of 100/80, the patient was not in shock. But this description would indicate to me that perhaps a fall in blood pressure and shock were impending.

Most important, one must look for respiratory distress. In major trauma of this type, the surgeon in attendance must direct his attention to the airway, for if it becomes plugged and the patient cannot breathe, all is lost and the patient will succumb. Other findings at hand suggested that something was catastrophically wrong within the abdomen. Rigidity and tenderness were found in the left upper abdomen, where, of course, rests the spleen, an organ unusually susceptible to fracture. No bowel sounds were heard. Further, the patient had sustained a fracture of the pelvis, a fracture of the femur and a scrotal tear with an extension toward the anus.

He had had several bouts of blueness as a baby, and recently had exhibited cyanosis of the lips and nailbeds on physical exertion. The left border of the heart extended to the anterior axillary line. There was a normal cardiac rhythm and a loud murmur. Summing up, he was a blue baby with an enlarged heart and a systolic murmur. By way of interpretation, I suppose we must believe that this patient, though he reached 22 years of age genital heart disease. Perhaps something had happened to his mother between the sixth and the ninth week of her pregnancy—possibly a viral infection or some kind of dietary deficiency. We shall have to ask one of the cardiologists to enlarge further on this aspect of the case, but it merely serves as background for the patient's final traumatic episode.

The laboratory data showed the urine to be clear of blood. I think this is most important. The urinalysis tends to assure us that the genitourinary tract was intact, and the normal cystogram serves as confirmation. The hemoglobin was 16 Gm. The

x-ray of the pelvis revealed multiple fractures and a transverse fracture of the right femur about four inches above the knee joint. The radiograph of the chest showed no evidence of fractured ribs, but there was evidence of mild cardiac enlargement. I suppose that the hemoconcentration was merely a reflection of what would have been a normal condition for this 22-year-old boy. Probably he had bled, but hemoconcentration was normal for him.

Dr. Carl L. Gillies, Radiology: Portable films were taken because the patient could not be moved to the X-ray Department. The portable film of the chest demonstrated the heart to be enlarged, as had been observed clinically. No fractured ribs were seen. The cystogram showed the bladder to be smooth, without evidence of rupture. The pelvis was not demonstrated very well, perhaps because the film was not taken with a Potter-Bucky diaphragm. There was inward dislocation of the hip, and there also were fractures of both rami of the pubis on the opposite side. The femoral head was dislocated into the pelvis—the so-called central dislocation. In the femoral fracture, the distal fragment was caught in front of the proximal fragment.

Dr. Hickey: Before taking this patient to the operating room, as in all cases of major trauma, attention had to be directed to the treatment of shock, and I know that in this instance two transfusions were given. In addition, such a patient should be given antitetanus therapy. From the description of the heart murmur and the patient's history of cyanosis as an infant, I would presume that he never served in the Armed Forces. Thus, he should have had a tetanus toxoid series, but definitely needed 5,000 units of T.A.T.

Because there was a possibility of intra-abdominal bleeding, suggested by the generalized tenderness, an exploratory laparotomy was undertaken. The operation lasted three hours. Within the peritoneal cavity 200 ml. of blood was found, and there was a rent in the mesentery of the terminal ileum. This latter was closed with sutures. There was a large retroperitoneal hemorrhage, apparently. At the conclusion of the operation, the peroneal laceration was closed, and the tibial tubercle was transfixed with a pin so that traction could be applied to the right femoral fracture. Since we have discussed the treatment of this fracture, we shall go back to what we might have found intra-abdominally.

Two hundred milliliters of blood is not a great amount if the spleen were fractured, but the spleen could have had a small fracture, and even in that case the spleen would have to be removed. Removal of the spleen is almost imperative if there is any tear at all, for otherwise it may bleed again at a later time. The clots tend to dissolve, and then there is a sudden gushing hemorrhage, perhaps two weeks later.

There was no evidence of a liver injury, but a fracture of the liver could have occurred, and suturing the liver is much more difficult. A tear in the terminal ileum has been noted. Why was it torn? This is an area of fixation of the bowel, and for that reason it is in more danger of injury than is the duodenum. So also is the stomach if it is greatly distended by gas, and the same would hold true of the bladder if it were filled with urine. Now, let us consider the peroneal laceration. If the tear in the scrotum extends into the anus and into the musculature, attention must be directed accordingly, and a colostomy in the left lower quadrant might need to be set up. The repair is greatly facilitated and function is improved if a temporary colostomy is constructed. This colostomy should probably be in the left lower quadrant, and for functional reasons probably should be of the divided type so that there will be no spillage.

The following morning, this patient became restless and confused. His blood pressure was normal, his lungs were normal and his heart was unchanged. His pulse was 150 to 200, and his tidal air volume was 400-700 ml., which I understand is within normal range, but he was breathing at a rate of 30 to 50 per minute, and thus though his pulmonary exchange may have been within the limits of normal, one would certainly question his need to exchange so large an amount of air per minute. Things were going badly. In addition, the patient was restless and confused. One of the things that might cause confusion and restlessness—particularly restlessness—would be physiologic pain.

The patient had a good urinary output, but I wonder whether he might not have had some type of overflow incontinence. Could he have had a very simple thing—a full bladder? I wonder whether he had any bleeding into the cerebrospinal fluid. There could have been a head injury. Also, perhaps, the petechiae, a consequence of this great propulsive force that was applied to his chest, could have produced central nervous system changes. Or is there something else? There were no signs of heart failure at that time.

On the following morning, the patient continued to do poorly. He was less responsive, his respiratory rate continued at the elevated level and his pulse was from 120 to 140 per minute. He had a rectal temperature of 105°F. (I suppose that if thermometers were being placed in the rectum, the tear could not have extended into and through the anus and into the rectum. That, presumably, was the reason why a left lower colostomy was not constructed.) He responded only to painful stimuli at that time. There was no evidence of any localized neurological disorder, and the output of urine remained adequate. He was treated with intravenous fluids and antibiotics, and died the following morning.

The great increase in his respiratory rate must attract our attention. We have clinical and x-ray evidence, I understand, that there was air going in, and thus, since there was no evidence of heart failure, we are left to suspect that this man had some type of focal A-V shunt. This change in the left-lower portion of the chest reflects an atelectasis that allows a shunting of blood and causes an inadequacy of oxygenation. It could be that the lung became wet as a consequence of the chest trauma.

It could be that there was fat embolization, or it could be a combination of this and the other possibilities I have mentioned. He had great disturbances of the retroperitoneal spaces, and he suffered great injury to the pelvic bones and to the right femur—all of which are areas where the fat content is high. This also, I suppose, could explain the brain injury.

Now as regards the increasingly comatose condition that the patient exhibited. Could this have reflected a spreading of the petechiae? Could there have been bleeding into the mid-brain? Could it be that this man had a bilateral subdural hematoma, and that this could have caused this rapid change without localizing neurologic signs? I believe that the laboratory personnel who examined his urine looked for fat, and that they looked for it in specimens of his sputum and fundi. Fat embolization occurs when the blood stream contains fat globules of sufficient size to obstruct the capillary flow.

A crushing type of injury can produce this entire syndrome that is before us. The timing is good. The changes can begin within a few hours, and probably will reach a peak between the second and the fourth day, but I am told that the peak can occur even as late as two weeks later, and that following fractures of the lower tibia, patients allowed out of bed to get around in walkers, after two weeks, sometimes die quite suddenly. The only cause of death noted at the postmortem examinations of these patients is a diffuse embolization of fat globules in their lungs. Actually, I suppose, the diagnosis of fat embolization is one that a physician reaches by a process of exclusion.

To sum up, I believe that this man died as a consequence of multiple injuries—a fractured pelvis, a fractured femur, etc.—and that we shall be told that the spleen was removed surgically. In addition, I would think that the patient will have had fat emboli within the brain and fat embolization within the lungs, that he will possibly have had a bilateral subdural hematoma, or else intracranial bleeding, and that he will have had a congenital type of cyanotic heart disease.

Dr. Bedell: His spleen was not removed at the time of the exploratory operation, and fat globules were not looked for in the sputum, urine or other places. The clinical diagnosis was that he had diffuse hemorrhages into the brain at the time of this compression injury. The diagnosis of fat embolization was not considered. The clinical diagnosis was brain damage secondary to a great many

small hemorrhages throughout the brain. The clinical diagnosis in regard to the congenital heart disease was interatrial septal defect.

Dr. Emory D. Warner, Pathology: I was asked to talk about this case particularly from the standpoint of fat embolism. I should like to start with some general considerations, and then use the findings in this particular case to emphasize some of the features of the problem of fat embolism.

Over the years, various authors have considered fat embolism to be the main cause of death in from 5-10 per cent up to 50-60 per cent of cases of fracture of the long bones, and have thought it a very common and very important cause of death in cases of severe traumatic injury to adipose tissue anywhere. Others have considered fat embolism of very little importance as a cause of death. Two studies of Korean War battle fatalities, I think, will serve to emphasize the difference of opinion on this subject. In one series of 79 cases, a large percentage of whom had injured extremities, it was concluded that fat embolism had been significant in 39 per cent, and the major cause of death in 10.* In another study—this time of 110 battle fatalities—it was concluded that fat embolism had possibly been a significant factor in one death.** From the experimental studies that have been made in laboratory animals and from the observations that have been made in man, I think we can state with a fair degree of assurance that fat embolism does occur in the vast majority of cases of fracture of the long bones, and also that it occurs in a majority of instances of extensive traumatic damage to adipose tissue. Thus, the problem actually isn't whether or not fat embolism is common. It is common. The justifiable difference of opinion has to do with how important it is that fat globules get into the blood stream. The serious consequences of fat embolisms that have been demonstrated in experimental animal work and seem demonstrable in man are ones that can, I think, be divided into three categories. The first and most obvious is mechanical obstruction of the pulmonary vessels resulting in rather prompt death—a condition comparable to massive pulmonary embolism produced by thrombotic material. A second type of lesion, primarily pulmonary, has been called a chemical lesion. With saponification of the fat by lipase action, there is a freeing of fatty acids. These are damaging to tissues. There is an increased permeability of the capillaries, and a slow, continuous seepage of fluid and some blood, producing hemorrhagic edema of the lungs and progressive asphyxia. This can occur over a period of several days. The third category is associated with the passage of fat through the lungs and into the arterial system, and the distribution of emboli

* Quoted from Peltier, L. F.: Appraisal of problem of fat embolism. *INTERNATIONAL ABSTRACTS OF SURGERY*, 104:313-324, (Apr.) 1957, in *SURGERY, GYNECOLOGY AND OBSTETRICS*, Apr., 1957.

** Scully, R. E.: Fat embolism in Korean battle casualties; its incidence, clinical significance and pathologic aspects. *AM. J. PATH.* 32:379-404, (May-June) 1956.

through the arteries. In the arterial system, fat globules lodge principally in the kidney, heart and brain. There is general agreement that for practical purposes at least there never is any significant ischemic damage to the heart. The significant damage from arterial fat embolism is in the brain.

Against the foregoing background information on fat embolism, I should now like to consider this particular case. The patient did have massive fat embolization of the cerebral vessels. A tremendous number of fat emboli lodged in the cerebral vessels. In association, there were multiple small hemorrhages, just visible grossly, and rather extensive brain softening. The hemorrhages tended, for the most part, to be perivascular. The damage was more conspicuous in the white matter than in the grey. As might be expected with this degree of arterial fat embolism, there were fat emboli in the kidneys, especially in the glomeruli. It was really quite extensive there, but apparently there had been no ischemic degeneration of the renal tissue. In the glomerular capillaries, the fat was present in large amounts and in sizeable globules. The vacuoles were seen reasonably well when the ordinary H and E stain had been applied.

There was rather extensive fat embolism in the lungs. The red-staining fat was evident in the pulmonary vessels. There was patchy collapse and emphysema, together with considerable edema and some hemorrhage in the lung tissue. There was no appreciable inflammatory cell infiltrate. This type of change would fit very nicely with the so-called chemical type of damage in the lung from the breakdown of some of the fat. There was rather intensive congestion of the viscera. The liver sinusoids were tremendously distended by blood. Since it was not hemorrhage but merely congestion of the sinusoids of the liver, much of the blood, of course, drained out when the liver was cut, leaving widely dilated sinusoids.

Thus, this patient did have evidence of fat embolism in the lungs and of arterial embolism in the kidneys. A few emboli in the coronaries were detectable with fat stain. There was massive embolization of the cerebral vessels, with the classic picture of brain damage associated with fat embolism of the brain and a history which would fit conjunctival hemorrhages.

I should now like to go a little further in using this case to point out some of the difficulties in evaluating the real role of fat embolism in the deaths of patients, and perhaps some of the reasons why there is so much difference of opinion. The lung lesion in this case would fit just as well with acute traumatic lung injury from an acute high-pressure blow to the lung, such as occurs in "blast injury." In this instance, since a truck fell on the patient's chest, acute traumatic damage to the lung certainly was a possibility. This could explain the lung changes as adequately as might fat embolism with the chemical type of lesion. The brain damage is classic for fat embolism. It is also

pretty much what might be found with severe asphyxia such as this man apparently had. The hemorrhages were a bit large for asphyxia alone, but presumably he did have this blast type of pressure wave into his brain at the time of the injury. Thus, it is difficult to evaluate how much of the brain hemorrhage may actually have resulted from the pressure which presumably caused the conjunctival hemorrhages.

Further to complicate the picture of cyanosis in this case, the patient had a history of congenital heart disease with occasional cyanosis, and he did have a very severe congenital heart lesion. The pulmonary conus was normal. The valve leaflets were not particularly scarred, nor were there scars on any other part of the heart, but the three leaflets of the pulmonary valve were fused to form a curtain. The actual orifice was only 3 mm. in diameter, appearing as a tiny hole at the apex of the conical curtain. Associated with this, there was tremendous hypertrophy and dilatation of his right ventricle. The heart weighed 660 Gm. He did not have an interventricular septal defect, but he did have a patent foramen ovale. It was closed with a flap on the left side, which would have rather effectively prevented left-to-right shunting, but was wide open for right-to-left shunting. Judging from the patient's history, I suspect that at least at times he had right-to-left shunting. Incidentally, this set-up could well have accounted for paradoxical fat embolism directly into his systemic arterial circulation, without any interval for fat to work through the lung vessels. With a fairly massive embolization of the pulmonary circuit to raise the pulmonary pressure, the chances for paradoxical fat embolism through the foramen ovale should have been good.

I think that this case is a rather good example of the problem of evaluating fat embolism. The candidate for fat embolism typically is a patient who has suffered extensive traumatic injury. There is likely to be shock. There may be hemorrhage, and there may be infection. Thus, there are many things to complicate the picture, and it becomes difficult to evaluate the importance of each. With the massive degree of embolization in the cerebral vessels, I feel that this case is probably an instance of death due primarily to cerebral fat embolism. At least, we have seen other cases in which there was no satisfactory explanation for the cerebral damage other than fat embolism, and in which death ensued with less extensive fat embolism than was present in this case.

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1. Innerfield, I.: Clinical report cited with permission

2. Clinical report cited with permission



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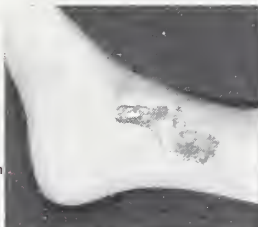


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ovale, congenital, with severe cardiac hypertrophy and dilatation

Fat embolism with massive cerebral embolization and focal cerebral hemorrhage

Adenomatous polyp, transverse colon.

Mr. Merle Diment, student: What would you have done differently in this man if you had suspected fat embolism in the beginning?

Dr. J. A. Buckwalter, Surgery: Of first importance is the *prevention* of fat embolism. The first preventive measure is the prompt splinting and immobilization of fractures, and early definitive treatment. It has been shown in experimental animals that the number of fat globules in the blood and the amount of fat in the urine are directly related to manipulation of fracture fragments. If an open reduction of the fracture is done, proximal application of a tourniquet will reduce the chances of fat embolization. Early elevation of traumatized extremities will reduce the incidence of embolization. It is not certain whether the amount of ingested fat is related to this phenomenon, but some experimental evidence seems to support this idea.

Once fat embolization has occurred, what is the treatment? The most widely accepted concept of the pathogenesis is intravasation. Tissue trauma, disruption of cells within a rigid, inflexible container such as bone with a rich vascular bed may result in passage of tissue fragments into the vascular tree. This concept fits with the mechanical phase of fat embolization which Dr. Warner has discussed. Because of the acuteness of this process, there is little to do. Death may occur within the first six to 12 hours because of the mechanical pulmonary block and right-sided heart failure. In animals, digitalis has reduced the death rate during this acute phase. The prompt treatment of shock may salvage some of these patients during the mechanical phase. This patient presumably died during the second or chemical phase of fat embolization. Emulsifying agents such as 5 per cent alcohol, 5 per cent glucose solutions and 20 per cent Decholin are reported to have been successful. Whether or not heparin should be used is controversial because of its lipolytic action. Free fatty acids are thought to be the main factor responsible for the second or chemical phase. A rise in lipase is usually noted during the second, third, fourth and fifth days following embolization. There are reports of patients who improved during the second phase when they were treated with heparin. The most important thing is to prevent rather than treat fat embolization.

Dr. D. M. Sensening, Surgery: Dr. Hickey has asked me to speak briefly about traumatic asphyxia. For a conference held last fall, I reviewed the literature that had appeared on this subject during the preceding 40 years.

Interest in traumatic asphyxia really stems from a tragedy in France in 1837, when 23 per-

sons were suffocated by a mob. Since 1837, a total of 138 cases have been reported. The main cause is the acute compression of the thorax and upper abdomen by either a direct or a jack-knife injury. The other causes such as aneurysm of the arch of the aorta, difficult delivery, reduction of a large omphalocele forcibly, and so on, are of course, quite rare.

The mechanism, as has been pointed out, is the forcing of blood in a retrograde fashion into the valveless veins which drain the head and neck area. The blood is forced back into the skin, and is believed to result in temporary paralysis of capillaries. In any event, skin biopsies usually show no vascular extravasation, and the skin doesn't go through the chromatic changes that are seen after hemorrhage. These chromatic changes, however, are seen in the conjunctivae. There are many components in the clinical picture. The blue discoloration, as one might expect, involves the face, neck and buccal mucosa. It may extend down over the trapezius muscles bilaterally, and may involve the upper arm. The petechial rash usually lasts from 10 to 14 days, and then fades. The patient frequently presents the picture of shock, with a pale, cold, moist skin. Severe hypotension, however, is rare. There may be contusion pneumonitis, with expectoration of frothy sputum, on the third or fourth day after surgery. There may be some fever at that time. As might be expected, fractured ribs are quite common. Unconsciousness is usually brief, and occurred in 44 out of 138 patients. These patients are frequently quite restless, thrashing about in bed and being rather difficult to manage from that point of view. This behavior is thought to be a result of cortical irritation.

We have seen two cases of traumatic asphyxia in this hospital in the past year. One was a young boy who showed signs of decerebrate rigidity with some gradual improvement but with an extensive neurological deficit. Reichert and Martin reported a patient who had some parasthesia, with retention of sensation despite muscular weakness. This patient, a little girl five years old, had a laminectomy, and no direct damage to the cord was demonstrated. She subsequently recovered, but did show some scissors gait. He reasoned that the sensation may be preserved because the fibers are less subject to damage.

Hyperpyrexia is a clinical point of real importance. This patient showed it, and the other patient showed a fever of 107°F. and required packing in ice. We did use a cooling blanket and got his temperature down. It is necessary to watch for this very important sign.

The eyes showed subconjunctival hemorrhages and edema. There may be temporary or permanent blindness, due either to hemorrhage into the sheath of the optic nerve or to extensive retinal hemorrhage, called traumatic retinoangiopathy or Purt-

schcr's disease. There should be an ocular examination, including careful scrutiny of the fundus, and if the patient shows any visual damage, the prognosis as regards recovery of vision may be guarded.

Subdural hemorrhage is quite rare, though Olivie did have one case. It is thought that the skull and the intracerebral pressure supplied by the spinal fluid give some protection against the sudden influx of blood from the thorax.

Fat emboli have been reported. For example, von Recklinghausen had a patient with extensive fat emboli without fractures. The explanation, he thought, was damage to adipose tissue in the thorax and mediastinum.

The prognosis is usually good. It should be noted that out of 138 cases, 104 recovered and 7 had permanent impairment of vision or blindness. It is important to treat the associated injuries and control the temperature, as I have mentioned. The picture of traumatic asphyxia itself, although rather frightening, does not require any specific therapy, and the prognosis depends to a very large measure on the severity of the associated injuries.

Dr. Jack Moyers, *Anesthesiology*: Can anyone tell me whether or not the patient received more than 500 ml. of whole blood?

Dr. Bedell: Yes, he received a total of four transfusions.

Dr. Moyers: That seems like a small volume of blood as replacement. The patient had a fractured femur, an acetabulum fracture with hemorrhage around the area, and a retroperitoneal hemorrhage

found at the time of surgery. I was impressed by the continuing tachycardia, and I am wondering whether this man might have suffered from insufficient blood volume during his entire hospital course. I don't know, but I've taken tachycardia to be a sign of blood loss.

Dr. Bedell: On the day after his operation, he had a normal blood pressure.

Dr. Moyers: Do you know what the blood pressure was?

Dr. Bedell: Yes, it was 128/82 mm. Hg., and the pulse was 92 and regular. These were the readings after the abdominal exploration. He was seen by the medical resident on call in regard to his congenital heart disease. At that time, there was some question about the possibility of some direct damage to the myocardium as a result of the injury. Electrocardiograms were taken, and they showed only right ventricular hypertrophy. Later, he developed the tachycardia, the rapid respiration, and so forth, and they were thought to be on a central basis.

Dr. Warner: The heart certainly couldn't have been of normal size.

Dr. Bedell: The physician who examined him the evening of his admission said that the left border of cardiac dullness was at the anterior axillary line. The physician who examined him the next day said that the left border of cardiac dullness was at the midclavicular line. I think that one can't tell from the chest x-rays precisely what the heart size was. It looks enlarged, but that may be because the chest x-ray was taken by the portable technic.

Pediatrics

S.U.I., IOWA CITY

Wednesday, September 16, 1953

- 9:30 a.m. "Importance of Variations in Muscle Tone"—Hans Zellweger, M.D., professor of pediatrics, S.U.I.
- 10:15 "Anticipatory Guidance in Pediatric Practice"—Lee Forrest Hill, M.D., chief of pediatrics, Raymond Blank Memorial Hospital, Des Moines
- 11:15 CASE PRESENTATION—Henry Cramblett, M.D., assistant professor of pediatrics, S.U.I., and Horace Hodes, M.D., clinical professor of pediatrics, Columbia University
- 12:30 LUNCH FOR MEMBERS OF IOWA ACADEMY OF PEDIATRICS
- 2:00 p.m. "Diagnosis of Heart Disease in Children"—Jacqueline Noonan, M.D., assistant professor of pediatrics, S.U.I.
- 2:45 "A Rational Approach to Antibiotic Therapy in Children"—Dr. Hodes
- 3:45 "Deviating Eyes"—R. D. Richards, M.D., assistant professor of ophthalmology, S.U.I.
- 4:15 CASE PRESENTATION—PROGRESSIVE CENTRAL NERVOUS SYSTEM DISEASE—D. N. Buchanan,

M.D., associate professor of pediatrics, University of Chicago
BUSINESS MEETING, IOWA PEDIATRIC SOCIETY
6:30 SOCIAL HOUR AND DINNER, University Athletic Club
Speaker: Ralph H. Ojemann, Ph.D., director, Preventive Psychiatry Research Program

Thursday, September 17, 1953

- 9:00 a.m. "Purpura"—Robert E. Carter, M.D., assistant professor of pediatrics, S.U.I.
- 9:45 CLINICAL CONFERENCE ON URINARY TRACT INFECTIONS—J. R. Porter, Ph.D., head of bacteriology, Rubin H. Flocks, M.D., head of urology, and Wallace R. McCrory, M.D., head of pediatrics, all at S.U.I.
- 10:45 (Topic to be announced)—Dr. Buchanan
- 11:30 CLINICAL CONFERENCE ON ADOLESCENCE—Robert B. Kugel, M.D., associate professor of pediatrics, and Raymond R. Rembolt, M.D., director of the Hospital School for Severely Handicapped Children, at S.U.I., and Dr. Hill

The course has been approved by the AAGP for nine hours of Category I credit



OF GEESE AND GOLDEN EGGS

Next year, it is reported, Congress intends undertaking a thorough revision of the federal tax laws, and it is up to each of us as an individual to tell his congressman and senators what changes he thinks should be made in them. There is more at stake than many people realize, and some of the somnolent individuals may be congressmen.

For the good of the nation, Congress ought at least to experiment with some reductions in income tax rates, both corporate and individual, for no one knows that the point of diminishing returns—the point at which taxes begin acting as a brake upon the economy—may not have been passed. In other words, it is altogether possible that the government might actually collect more in taxes if businesses and individuals were permitted to keep larger shares of their earnings.

There would be some other beneficial effects—these ones certain, rather than merely possible. First, the capitalizations of businesses could be changed for the better, and through an increase in the issues of stock offered for sale, some of the inflation would disappear from stock prices. As the tax laws are at present, boards of directors prefer to borrow money rather than sell additional stock, principally because bond interest can be charged off as an expense of doing business, but dividend payments cannot. In consequence, they assume more of a debt burden for their corporations, thus putting them in danger of default and foreclosure during the next sharp recession.

Second, encouragement would be provided for the formation of new businesses. There are some companies still thriving that were established during the 19th Century, but they are a small minority, and if we assume that the majority of the ones that will prosper during the fourth decade of the 20th Century must be started now, some encouragement should be offered to the men who might be willing to start them, rather than to continue working for salaries.

Third, Americans' respect for law must be no further impaired. Even now, the search for ways of evading the federal income tax has become a ranking indoor sport, and as loopholes are plugged and the tax is made ever more nearly confiscatory, the game will grow in popularity, the "revenueurs"

will come to be regarded as villains and quasi-legal evasions will grow in respectability. In this connection, our lawmakers may need to be reminded of the effects of the Volstead Act, another highly unpopular piece of legislation.

Two or three months ago, in acting upon an appropriation bill, one of the houses of Congress actually voted to repeal the provision in the Internal Revenue Code under which an individual taxpayer is granted a \$50 exemption on his dividend earnings, plus a 4 per cent tax credit on the remainder. The other chamber failed to concur, and the provision still stands, but there was danger of a reversal in legislative trend. Actually, this token dividend exemption means little to the taxpayer in dollars and cents, but at the time of its adoption, in 1954, it represented a grudging reaffirmation by Congress that double taxation on corporate earnings (usually 52 per cent upon the corporation and then anywhere from 20 to 47 per cent of the remainder upon the stockholder) is thoroughly unjust. As things turned out, it hasn't cost the U. S. Treasury a cent. The Canadian government went further, granting first a 10 per cent and later a 20 per cent exemption for dividend income, without lessening the take of its tax gatherers. But the American lawmakers almost took a step in the opposite direction.

Another American income tax inequity has to do with the capital gains tax. A few years ago, Congress quite justly amended the law so as to forgive a man the tax on his "profit"—amounting, perhaps, to several thousands of dollars—in selling a dwelling for \$14,000, let us say, provided that he bought another house for \$14,000 within a specified length of time. Under such circumstances, it was reasoned, he had merely changed the location of his investment, rather than taken his profit. Really, now, there is no difference between that situation and the one of a man who sells 100 shares of ABC stock at 140 after holding it through a rise from 90, and then more or less immediately buys 100 shares of XYZ stock at 140, or buys 100 shares each of three other stocks priced at 65, 55 and 20. For the time being, he has used none of his "profits" to help pay his living expenses. Indeed, since his money is still invested in industry, he can just as reasonably be said not to have taken his "profits" at all. The only perceptible difference between these two sorts of investment—the homeowner's and the stockholder's—is the sentimental premium that we attach to homes.

Of course the capital gains tax also introduces an undersirable element of artificiality into real estate and security markets by putting a penalty upon selling at a profit. In consequence, the owner is reluctant to take what he regards as a generous or perhaps even an outlandish price for his holdings, and the market continues to rise for no good reason at all. One is "locked in" for six months, as far as his purchase is concerned, since if he

were to sell within that time he'd have to pay full income tax on the rise in price. Thereafter, he is liable for a tax of 25 per cent, or slightly less, on the rise in price.

The capital gains tax is said to be more or less a nuisance even to the government, for it yields comparatively little revenue.

ORAL ANTIBIOTIC FOR FUNGUS INFECTIONS

On July 16, Schering Corporation announced its entry into the antibiotic field with Fulvicin[®], an orally administered therapy for bothersome fungus infections of the skin, hair and nails.

Fulvicin, a derivative of penicillium grieseofulvum, is fungistatic—i.e., it prevents growth of the infecting fungi, but does not actually kill them. Its mode of action has not been definitely established, but at least theoretically it cuts off the source of "food" to the fungus infection. The fungi live on keratin but carefully avoid the living cells. Fulvicin, when taken orally, makes its way through the cellular structure and is finally deposited in the outer layer of skin and in the hair follicles, somehow making the keratin useless to the fungi. Thus deprived of food, the fungi are eventually sloughed off and the infected area has a chance to heal.

A decrease in itching and inflammation is usually seen in a matter of a few days. Tinea infections often disappear within two or three weeks, except for infections of the nails, which require longer periods of treatment. Side effects have been mild and transitory—usually heartburn, nausea or diarrhea. Occasionally a cross-sensitivity in penicillin-sensitive patients will cause a reaction to the drug, and for that reason, patients should be observed for sore throat, fever or rash.

The length of treatment varies with the severity and the site of the infection. A period of four weeks may prove adequate in many patients, but if the infection is stubborn it is recommended that therapy be continued for four weeks after the disease has been controlled.

Originally, Schering specialized in corticosteroids, sex hormones and antihistamines, but has gradually expanded into other areas. In recent years, it has marketed a tranquilizer, and it has now acquired facilities for the production of antibiotics.

Please Mark Your Calendar
ISMS ANNUAL MEETING

April 24-27, 1960

Veterans' Memorial Auditorium
Des Moines

CANCER AND HEART GROUPS SEEK IMPARTIAL STUDY

The national board of directors of the American Cancer Society has "fully endorsed" an American Heart Association statement calling for the appointment of an impartial group of physicians and community leaders to study the problem of multiple appeals for funds.

In part, the heart group's statement is as follows:

"United funds and federated campaigns have not provided satisfactory solutions to the problems of multiple health appeals. Furthermore, they are not constituted to provide the leadership and support for the research and other programs essential to the reduction of disability and death caused by the major chronic diseases.

"Since the public interest urgently requires that the utmost support be given to the voluntary health agencies dedicated to the conquest of these major chronic diseases, the Board of Directors of the American Heart Association hereby resolves to seek the appointment of an impartial and qualified group of physicians, scientists and community leaders to undertake a study of the problem of multiple health appeals with the objectives of:

"1. Defining the major areas of chronic disease which present the greatest threat to our national health and welfare.

"2. Establishing criteria which will guide the public in making voluntary contributions of time, effort and funds to individual health causes."

FOREIGN DOCTORS FLOCK TO TAKE AMERICAN EXAMS

The numbers of foreign-trained physicians taking the qualifying examination of the Education Council for Foreign Medical Graduates are rapidly increasing. Only 298 took the first examination in March, 1958, but 844 took the one in September, 1958, and 1,772 took the one given in February, 1959. The next one will be given on September 22. There were no foreign sites for the first test, but there were 30 for the second one and 44 for the third. For this fall's examination, there will be 15 centers in Latin America; 14 in the Far East; 7 in the Near and Middle East; 13 in Europe; and 1 in Africa. In addition, examinations will be held at various places in the United States.

The Education Council for Foreign Graduates, with headquarters in Evanston, Illinois, aids graduates of foreign medical schools in establishing their qualifications for internships and residencies in U. S. hospitals. It is sponsored by the AMA, the AHA, the Association of American Medical Colleges and the Federation of State Medical Boards of the United States.

In the first examination, 51 per cent of the 298 candidates won standard ECFMG certificates based

on scores of 75 per cent or better. No temporary certificates were issued, since the language problem was not then recognized to be as great as subsequent examinations have shown that it is. In the second examination, 49.5 per cent of the 844 candidates won standard certificates, and another 26.8 per cent won temporary two-year certificates based on scores of 70-74 per cent. In the third examination, 43.4 per cent of the 1,772 candidates won standard certificates, and another 25.5 per cent won temporary ones.

There was considerable evidence that inadequate command of English played a major role in failures at some centers, according to Dr. Dean F. Smiley, executive director of the Council, and there was one center at which three out of five candidates either failed or did very poorly on the ECFMG English test. In the whole group of 494 who took the test at foreign centers, 45 showed serious inadequacy in English, but in contrast, among the 1,278 foreign-trained physicians who took the English test in U. S. cities, none failed and only three did poorly.

ABOUT THE ADJOINING 'LETTER TO THE EDITOR'

The steps that the ISMS has taken recently—along with other state medical societies throughout the country—to let Blue Shield meet the health insurance needs of larger numbers of elderly people and still stay solvent have provoked an outpouring of "letters to the editor." We are happy to publish them, even though—as we have taken pains to say—they don't represent and aren't to be taken as reflecting our point of view.

Generally, we draw the line at misstatements of fact, but we are printing the accompanying letter from Dr. C. E. Berryhill, of Readlyn, despite its containing an allegation (actually a major premise) that is quite incorrect. We refer to his assertion that the ISMS in the past has aligned itself with the Republican Party.

Actually, the ISMS never has endorsed and undoubtedly never will endorse a political party or a candidate for any office. On the contrary, it has done its best to avoid all actions and statements that might be interpreted as political partisanship.

Dr. Berryhill, and everyone else of course, is entitled to make whatever evaluations he pleases, but as long as on the one hand Senator Byrd, of Virginia, and Senator Douglas, of Illinois, share the Democratic Party label, and on the other hand Governor Rockefeller, of New York, and Senator Goldwater, of Arizona, share the Republican, it seems to us very hazardous for anyone to assume that particular attitudes on medico-economic issues put an organization into one political camp rather than into the other.

Letter to the Editor

Sir:

The fight to save the free practice of medicine is moving into another crisis with the Forand Bill hearings, but I doubt that the battle will be won or lost immediately. This issue will not be settled for several more years at least, and with this in mind, I should like you to consider the problem in its broadest aspect.

Most doctors—about 80 per cent, I think—are Republicans. They were born and brought up Republican, and their experience as businessmen—which all of us are—has reinforced their political philosophy. Sometimes it seems to me that medical spokesmen become too political. As a Democrat I resent the medical organization's being used as a sounding board for the Republican party. How I feel about it isn't important, but there are a couple of other angles that are very important.

(1) If the Democrats can convince themselves that the medical profession is Republican, then we doctors become the opposition to be vanquished. (2) If the position of the profession becomes profoundly political, then the Democrats can convince themselves that this is a political rather than a professional issue, and they will meet us as equals on our own ground.

To emphasize the importance of the above statements, take a look at the national political scene. It appears almost certain that the Democrats will win the 1960 election and retain control of Congress in 1962. Furthermore, every Democratic president since the Civil War has served more than four years. Thus, I think we should prepare to deal with a Democratic national administration for the next six or eight years, and a rather radically Democratic one at that. If the practice of medicine is the same in 1968 as it is today, I shall be so surprised as almost to be disappointed.

Certainly every doctor should support the party of his choice in the 1960 election, but because of the possibility that the election will go Democratic, I think the medical association should divest itself of every hint of Republican support or influence.

I think we should reverse our field on one major point. Instead of resisting every bill for national prepaid health care and denying that any such law is necessary, we should concentrate on writing our own bill. Our present position may be correct, but the change would be more practical. The law will be written, and our best bet is to write it ourselves. The quicker we adopt that viewpoint, the easier it will be for us to do so, and the more influence we shall have.

Any national health plan supported by the med-

ical profession should satisfy four criteria: (1) It should not change the present status of medicine any more than necessary. (2) It should satisfy the public need. (3) It should have a reasonable chance of getting through Congress. (4) It should be complete and final, so that it cannot be amended, modified or perverted into a system of socialized medicine.

A few decades ago, the practice of medicine was purely the doctor's business, and not a political issue. During the past two or three decades, the insurance industry has come into the picture, and now the government is dealing itself in. When this issue is finally settled, one of these three contending forces will have thrown out the other two, or any two may form a coalition, or all three will have resolved their differences. This last alternative will be attempted first and most often, but it is so obviously complicated that it cannot possibly meet the fourth criterion. That is to say, such a settlement will never be "complete and final."

Alternative would be to turn the clock back 30 years—to outlaw health insurance and government interference. Through unity, discipline and doctors' strikes, we could achieve that objective, but I don't think we shall.

The opposite alternative would be for the government to take over and run the whole show. This is socialized medicine.

I can't think of any plan whereby the insurance industry could go it alone, and thus three more alternatives remain—combinations of two of the three contending forces. All three of these alternatives look more attractive and more probable than do any of those mentioned above. First, a coalition of the medical profession and the insurance industry is essentially the existing situation, the *status quo*. It is a good system, but Congress is unhappy with it, and it is unstable. Second, a coalition of the insurance industry and the government would be a plan under which the government subsidized the insurance firms. It is the plan suggested by President Eisenhower. A Democratic Congress will shy away from that one. The Congressmen do not trust the insurance companies.

The remaining alternative is not hard to figure. Philosophically, it would be a coalition between the government and the medical profession. In practice, it would be a subsidized Blue Shield. To me, that arrangement seems entirely satisfactory. I suggest a national Blue Shield contract providing full coverage for all accidents, injuries and office surgery, and full coverage of all doctor bills of hospitalized patients. Thus, everything

except medical office calls would be covered, averaging out about 80 per cent of the average man's annual doctor bill. The income ceiling should be set at about \$6,000, and the contract should be available to all at one premium regardless of age or health. This policy would be quite similar to our "5400" contract, with a fee increase of about 25 per cent. The fee schedule and income ceiling would be the same all over the country, but each state would have its own plan with minor premium variations. There would be only two compulsory features in the arrangement. The government would be compelled to pay the premiums for the aged, the disabled and the indigent (perhaps through Social Security, à la Forand), and since this would be a complete monopoly, anyone who wanted health insurance would have to buy this contract. Since it would be a monopoly, the fee schedule would have to be set by a joint Blue Shield-Congressional committee. The majority of the population would buy this contract through job-connected groups.

It might seem that this plan would not be "complete and final," in that Congress could cut the fee schedule or alter other provisions of the contract, but a national contract would unite the profession more firmly than ever before, and we could enforce any fair and reasonable demands by a doctors' strike if necessary.

In spite of all the time and space I have used, I haven't yet suggested anything new or radical. Thus, before closing, I shall add a couple of innovations of my own.

I think the national Blue Shield contract should absorb the Blue Cross. Doctor and hospital bills would be paid out of one account. Hospital bills would be paid first, in full, and the doctors would get the rest. Thus, any abuse of the government insurance would come out of our pockets.

Blue Shield should always be in the red. Premiums should be figured to pay 95 per cent of the listed fee. If more money were available, payments to doctors would still be pro rated at 95 per cent, and premiums would be reduced. If premiums were set too low, or if there were a lot of cheating, the payment rate would drop to 90 or 85 per cent or lower. Thus, the plan would have a self-contained policing system. There is another justification for this suggestion. In the days before insurance, few doctors hoped for a collection rate in excess of 95 per cent. If everyone has insurance and the insurance pays 95 per cent, we are as well off as before. Health insurance should insure the patient, not the doctor!

In conclusion, I suggest that during the next 12 or 14 months, we prepare our own version of national health insurance, to be introduced as a bill in Congress in January, 1961.

C. E. BERRYHILL, M.D.

Readlyn, Iowa.

Statements published in these columns are not to be taken as reflections of the opinions or attitudes of the editors of the JOURNAL.

FREE CHOICE OF PHYSICIAN

The issue of free choice of doctor was not helped by the question propounded by the reference committee of the AMA House of Delegates at its Minneapolis meeting in December, 1958: "Acknowledging the importance of free choice of physician, is this concept to be considered a fundamental principal, incontrovertible, unalterable and essential to good medical care without qualification?" An unqualified yes or no answer to it could be viewed justifiably as unintelligent and even ridiculous. The question, with its unfortunate and "loaded" wording, may well earn an immortal place beside that hoary old query, "Have you stopped beating your wife?"

The recent implication that if a third party pays the bill, free choice need no longer apply was also confusing—as though the third party (employer, union welfare fund, government or insurance company) were generously and charitably distributing largesse, rather than merely channeling earned, negotiated or contributed funds. Do individuals automatically lose their rights when they choose to accept part of what is due them in the form of medical care insurance?

In refreshing contrast is the dynamic reiteration of free choice by the House of Delegates of the Medical Society of the State of New York at its recent meeting. The delegates obviously do not consider it relevant to the issue that the soldier wounded in battle, the mangled victim of a highway accident, the occupant of a charity ward or the resident of a one-doctor geographic area is unfortunately unable to exercise free choice. The delegates made it clear that not only were they in vigorous opposition to unwarranted restraint where it now obtains, but that free choice should be extended further to include areas where it is now feasible but is denied. Above all, it should be abundantly evident that a third party concerned in the payment scheme does not by that fact acquire the right to abrogate free choice.

A maneuver that only befuddles the issue is the shifting of emphasis to "good medical care," making it seem that the point at issue is free choice *versus* good medical care, and not free choice *and* good medical care. The standards of medical care delivered under either system may be good or bad, but with free choice good medical care becomes even better; with closed panels bad medical care becomes even worse. When there is poor medical care in a closed panel, the patient is trapped. With free choice, he can at least extricate himself. And it is not true that an insuring agency can impose and enforce better standards of excellence than can the doctors themselves.

Those of us high or low whose belief in free choice has wavered should bear in mind that firmness on this and other fronts at issue is vital to the medical future of both our patients and the profes-

sion. A cliché, after all, may be a basic truth clothed in familiar terms. It may properly epitomize a serious, important and worthwhile issue. No war was ever won by surrendering in every battle. Let us not lose this one!—Editorial, *NEW YORK STATE JOURNAL OF MEDICINE*, 59:2866-2867, (Aug. 1) 1959.

A CALL TO ARMS

We must not let our position as physicians confuse us in our efforts as sound, level-headed, realistic citizens participating in a social revolution, in which the interests of fanatical minority groups are pitted against the interests of the nation as a whole. Those who have taken the responsibility for making the laws of the land need us. Do not forget that they are fine gentlemen. Those in this state sit [in the legislature] at a great loss to themselves; they act and vote according to the information they have.

One of the representatives, a banker, in addressing our Rotary Club stated: "Our legislators are flooded with the cries of the militant minority while the great general public stands by almost silent." In his address on the need for "leadership in a time of greatness," he urged "leadership, not lip service" on the part of the general public, and he pointed out that "the legislature is no better or worse than the people who elect their representatives and, once having elected them, support their efforts in the state's behalf or abandon them, only to complain when it is too late."

We must not allow our desire to serve where needed as physicians make us lose sight of the need to protect the people by protecting the profession which serves them.

THE 'WEAPONLESS' APPROACH

The two obligations, one that of a physician, the other that of a citizen, are separate and distinct, and are different in approach. Dr. James Cleland, dean of the Duke University Chapel, recently awoke me to this fact in no uncertain terms. I had written to him during Lent as follows:

Dear Jim:

Tom Henshaw's article "Letters From a Roman Soldier" in the *DURHAM HERALD*, Friday, March 27, contains a statement that should be in the hearts of all men.

The soldier is writing to his father, and he says: "The business of this night has thrown me into close contact with the man from Galilee, for it was Titus and I who led the arresting soldiers. This contact, I confess, my father, has made an effect upon me that is most unsoldierly. When he looks at me, I feel a strange desire to throw down my sword and cast off my helmet and breast-plate and spring weaponless to his defense."

To an impulsive individual, that word "weaponless" has a profound effect. If this type of defense could be a part of the souls of mankind, we would then

know true love and our troubles would be no more.

Please pardon my letters, but when these matters come up in my life, it is good to discuss them, and it is to you that I turn.

Lenox

Now you would think that such a letter would make a minister feel that at last he was getting his message of Christianity across. Let us read his reply:

Dear Lenox:

Those articles by Henshaw in the Durham paper are remarkably good. You have certainly focused on the key word in the quotation you sent me—"weaponless." Therein lies the problem. Love cannot defend itself; society does not live by love; so what? I shall play with this idea one of these days. You certainly keep me supplied with primers.

Ever your sincere friend,

Jim

And neither can we as physicians—and I use the word in its true sense—defend medicine. We must become willing citizens aware of the times. We must stay alert to the myriad forces that would destroy the individual. As citizens we must hate the sin but as physicians we must continue to love the sinner.

In these affairs, we must gird against ill-conceived theoretical programs, and we should make sure that we are a respected regiment, capable of rapid and full mobilization and willing to use our leadership and political tools against the "diseases of socialism." In this struggle we shall need the same degree of effort and enthusiasm required to combat physical diseases. Our efforts must not be made by violence or antagonism, but by more subtle means, using the force of ideas. We must not take for granted the uneasy stages of truce in which, as now, we may occasionally find ourselves. A truce is not a period for rest but for work. It represents a margin of time in which we must try to win.

We must be kind. We must not forget the purpose of our profession. We must be courteous, but with abundant toughness of mind and spirit. Above all, may we be humble; but in our attack—and I mean attack, not defense—we must feel that same thrill felt by a true Christian when he sings "Onward Christian Soldiers, Marching as to War."

We must realize the need of such efforts carried out with belief in God and as his agents as physicians. We must remember that He knew that right could not always defend itself with love and patience. The Christian God whom we worship is the Lord who cleansed the temple, who even called his most intimate disciple Satan, and who criticized the Pharisees even though he had been brought up by them. He recognized cancerous growths when he saw them, whether they were of the spirit or of the flesh, and he strove to destroy the disease and save the victim.

ORGANIZATION FOR SERVICE

There are now many socialistic movements that are like a surf which threatens to destroy the individual and eventually destroy our kind of society, in which individuality can survive. The only breakwater against this ever-pounding tide is organization.

The organization of forces of which I speak is that needed to enter the struggle against social destruction of the individual—"the disease of socialism." Our efforts in this field will be as strong or as weak in any community, large or small, as each physician-citizen makes it.

Our situation is well illustrated by the fable of the dog that boasted of his ability to run. One day he gave chase to a rabbit, but did not succeed in catching it. The other dogs poked fun at him, reminding him of his previous boasting. The disappointed dog replied, "You must remember that the rabbit was running for his life, while I was running only for my dinner." I fear that in our present state we may be the rabbit running for his life. In this instance a large practice, hospital facilities and comfortable circumstances are not our goal. Our goal is survival.

In our efforts, we must not be pessimists. The world today is better than it has even been. We must be optimistic even though, if pressed, it may be difficult for us to explain our optimism. Let us appraise the situation, and if we must criticize, let us do it constructively.

Medicine is facing a crisis, but it is only a part of a crisis that involves the whole American tradition, in which our way of life is trying to withstand the strains and pressures of a large, heterogeneous society. Things cannot always be perfect, but that should not prevent us from undertaking to meet our responsibilities with perseverance and with hope for success.

—Condensed from the presidential address of Dr. Lenox D. Baker, at the annual meeting of the North Carolina Medical Society, in Asheville, May 5, 1959.

INSTITUTE ON EPILEPSY

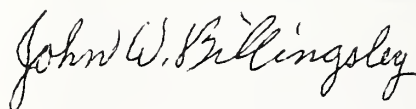
The Eleventh Western Institute on Epilepsy will be held on September 10-12 at the Kaiser-Knickbocker Hotel, in Milwaukee. The principal speakers will be Dr. A. Earl Walker, professor of neurosurgery at Johns Hopkins University; Dr. Frank Forster, chairman of the Department of Neurology at the University of Wisconsin; and Dr. William G. Lennox, former director of the Seizure Center at Children's Hospital, Boston.

The registration fee is \$5, and physicians who intend attending are asked to send advance notification to Dr. Jean Davis, the Institute chairman, 312 East Wisconsin Avenue, Milwaukee.

President's Page

You, I am sure, will be as regretful as I am about the resignation of Dr. Charles H. Flynn, of Clarinda, from the Board of Trustees. A recent severe illness has forced him to curtail his activities considerably, but he has a long and altogether creditable record of service to the Iowa State Medical Society, including membership on its Grievance Committee, on its Judicial Council, and on various reference committees of its House of Delegates, and all of us are confident that with his return to health, he will again give his colleagues the benefit of his advice and assistance.

Dr. Otis D. Wolfe, of Marshalltown, has been named to replace Dr. Flynn on the Board of Trustees. A similarly active leader in organized medicine, Dr. Wolfe has been chairman of the ISMS Judicial Council and is a member of its Public Relations Committee.

A handwritten signature in cursive script, reading "John W. Billingsley". The signature is written in dark ink and is positioned above the printed name "President".

President

THE JOURNAL *Book Shelf*



BOOKS RECEIVED

THE CARE OF MINOR HAND INJURIES, by *Adrian E. Flatt*, M.D. (St. Louis, The C. V. Mosby Company, 1959. \$9.50).

SYNOPSIS OF EAR, NOSE AND THROAT DISEASES, by *Robert E. Ryan*, M.D., *William C. Thronell*, M.D., and *Hans von Leden*, M.D. (St. Louis, C. V. Mosby Company, 1959. \$6.75).

PRINCIPLES OF DISABILITY EVALUATION, by *Wilmer Cauthorn Smith*, M.D. (Philadelphia, J. B. Lippincott Company, 1959. \$7.00).

ANESTHESIA FOR INFANTS AND CHILDREN, by *Robert M. Smith*, M.D. (St. Louis, C. V. Mosby Company, 1959. \$12.00).

ELEMENTARY STATISTICS WITH APPLICATIONS IN MEDICINE AND THE BIOLOGICAL SCIENCES, by *Fredrick C. Croxton*, Ph.D. (New York, Dover Publications, Inc., 1959. \$1.95).

THE POWER OF SEXUAL SURRENDER, by *Marie N. Robinson*, M.D. (Garden City, N. Y., Doubleday & Company, Inc., 1959. \$4.50).

SURGICAL SERVICE GUIDE, by *Louis T. Palumbo*, M.D. (Chicago, The Year Book Publishers, Inc., 1959. \$6.00).

EVOLUTION OF NERVOUS CONTROL FROM PRIMITIVE ORGANISMS TO MAN: A SYMPOSIUM ORGANIZED BY THE SECTION ON MEDICAL SCIENCES OF THE AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE AND PRESENTED AT THE NEW YORK MEETING, DECEMBER 29-30, 1956, ed. by *Allan D. Bass* (Washington, D. C., American Association for the Advancement of Science, 1959. \$5.75).

BOOK REVIEWS

AN ATLAS OF NORMAL RADIOGRAPHIC ANATOMY, SECOND EDITION, by *Isadore Meschan*, M.D., with the assistance of *R. M. F. Farrer-Meschan*, M.D. (Philadelphia, W. B. Saunders Company, 1959. \$16.00)

This new edition contains all of the useful information of the original one pertaining to radiographic anatomy and its applications, plus additional material in several areas. A completely new chapter on radiation protection has been added, which touches briefly but rather completely upon all of the important facets of this problem.

The chapter on radiographic study of the brain has been augmented, particularly with regard to the posterior fossa and to angiography.

Much new material has been added to the chapter on the heart and great vessels, in keeping with the rapid strides that have been taken in this area since the publication of the first edition. Information on anatomy and physiology of cardiac catheterization, angiocardiology and peripheral angiography (the aorta and its branches) is well presented.

This work will continue to be a standard text in radiology departments, benefiting radiologists and non-

radiologists alike. It will be especially helpful for non-radiologists who do some radiography, for radiology residents and for x-ray technicians.—*Louis L. Maher*, M.D.

SYNOPSIS OF TREATMENT OF ANORECTAL DISEASES, by *Stuart T. Ross*, M.D. (St. Louis, C. V. Mosby Company, 1959. \$6.50).

This is one of the more recent additions to the "Synopsis" series of books on various diseases. In one respect it is more or less unique, for it is the first such volume to appear on this specific subject in over three decades.

It is obviously not designed for the specialist in this field, or for the general surgeon whose knowledge of these diseases must of necessity be complete. However, since the majority of patients with anorectal difficulties are treated by general practitioners, the book has quite properly been designed for them.

The chapters on anatomy and physiology, and on history and examination are unusually complete, though concise, and serve as an excellent review for anyone interested in diseases of this area or concerned with proctosigmoidoscopic and digital-rectal examinations. Sage words of advice are also to be found in the chapters on constipation and impaction, pruritis ani and the irritable colon syndrome—all of which are too often inadequately treated.

Taken as a unit, this synopsis appears to have been unusually well planned and concisely written, for it provides the reader with a maximum amount of knowledge and opinion in a minimum amount of easily readable text. The illustrations are good. Argumentative material and references have been completely omitted.—*Samuel J. Zoeckler*, M.D.

TRAUMA, by *Harrison L. McLaughlin*, M.D. (Philadelphia, W. B. Saunders Company, 1959. \$18.00).

This book deals with a host of traumatic conditions involving the whole body, but particularly the bones and joints. It presents the rationale for treatment of all manner of traumatic injuries that has been developed over many years at Columbia-Presbyterian Medical Center, New York City. The author is particularly well-versed in his subject, and has taken time to explain the reasons for the methods of treatment that are advocated. Numerous illustrations complement the text.

This volume represents the answer to a long-felt need for a manual on the treatment of all traumatic wounds. It can be highly recommended for study by all physicians.—*Everett M. George*, M.D.

The Rise in Blue Shield Income Limits Is Essential

EARL C. LOWRY, M.D.

DES MOINES

MANY PHYSICIANS have expressed genuine concern over the fact that the income levels for full service under Blue Shield contracts has been raised from \$2,400 single, \$3,000 subscriber and one dependent, and \$3,600 family to \$3,600 single, \$4,500 subscriber and one dependent, and \$5,400 family. Also, there has been a great deal of comment about the role of Blue Shield in our medical economy, its influence on fixing fees and its possible effects on the future of medical practice.

Originally, with its income limits of \$2,400, \$3,000 and \$3,600, Blue Shield in Iowa made a service plan possible for 70 per cent of the population. But by January, 1959, less than 20 per cent of the people were so eligible. Many doctors have questioned the accuracy of our conclusion that approximately 47 per cent of the people of Iowa will be eligible for the new \$5,400 maximum family income policy. In this connection, the following statements published on page 19 in the issue of BUSINESS WEEK dated May 20, 1959, will be of interest:

"Look at what's happening to personal income, and you see a real surge shaping up for the nation's retailers.

"Since February alone, payrolls have jumped \$6 billion. And that's only one measure of the rise in incomes.

"Personal income over-all—the total of people's incomes—should touch \$375 billion this year. That's a good \$20 billion over last year.

"The striking thing in the income figures is what's happening to families' incomes. It's worth taking a close look at.

"The strictly average U. S. household—counting both families and unattached individuals—will have an income this year of about \$6,480. That's about \$260 more than last year.

"But urban families will do much better—an average among non-farm families of \$7,550. That compares to \$7,300 last year and only \$6,626 in 1955.

"Most of this year's gains are real—they won't be offset by higher prices. This urban market is big and growing rapidly. This year more than half these families—54 per cent of them—will have incomes over \$7,500. There are almost 15 million of them. Their combined income is more than \$180 billion. Looking ahead to the 1960's, this will be an even more affluent market.

"Two very significant trends account for the rapid growth of these well-off urban households.

"We have more and more professionals in the labor force. There are more salaried jobs—which means steady pay, and relatively high pay. Families of salaried workers are especially likely to have incomes of \$10,000 or more. As their numbers increase, the averages go up.

"Clerical and sales workers are another big urban group. Their numbers—and their incomes—are rising fast.

"Incidentally, a lot of manual workers—'craftsmen and operatives' as they are classified by the Census Bureau—now fall into the upper-income group. Families of these workers are the largest single group in the over-\$7,500 class. They make up almost a third of the total, but their number is growing relatively slowly.

"It's working wives, though, that are the Number One reason putting many families into the upper income brackets. Figures on this are impressive now—and the trend is sure to become more important.

"Look at the families at the top of the income scale—the top 20 per cent of all families. Some 40 per cent of the wives in this group hold steady jobs.

"And as business picks up this year, and more women go to work, there'll be another boost to incomes for many families.

"There are fewer and fewer families on the other end of the scale—those with incomes of less than \$6,000 a year. These are usually headed by older people, retired men, farmers, or by women. One main cause of the drop here: the steady falling away in the number of farm families."

VOLUNTARY HEALTH PLANS AND THE PRACTICE OF MEDICINE

Regarding the influence of voluntary health plans on the practice of medicine, I wish to list some statements that were published during 1958 and 1959, and to indicate the sources:

"The wish of the typical medical man is to be left alone; to be allowed to look after the health of his patients, strive constantly to improve his diagnostic and therapeutic skills, and provide economic security for himself and his dependents according to his own ability to do so. He asks for no discriminatory laws to be passed in his behalf. With all other citizens, he shares the problem of coping with the appalling increases in the cost of living and has been uniquely successful in holding the line in the matter of his own charges for service.

"But the doctor can no longer hope to live in a vacuum and practice medicine in an ivory tower. By

now, he must be aware that there are powerful social forces on the march which aspire to gain economic control of his professional abilities in order to sell them to the public much as if they were groceries or home furnishings. . . .

"His efforts to resist this unwarranted encroachment on his personal and professional freedom are being labelled reactionary and inconsistent with modern, liberal social thinking. It is charged that he does not hold a proper concern for the public interest, and it appears that it will soon be forgotten that the medical profession first initiated voluntary health plans to provide prepayment for hospital and physician services. . . .

"Voluntary plans, which have expanded so rapidly in recent years, constitute the doctor's most powerful weapon with which to discredit the philosophy of those who advocate discriminatory closed-panel clinics, compulsory national health insurance and other plans which must eventually lead to the socialization of medicine.

"Under a sound voluntary system, citizens need not surrender yet another of their precious freedoms to bureaucratic control. It is in no sense reactionary to foster the idea that the voluntary way is the American way, and that the public interest is best served by the assumption of individual public responsibility. Each citizen must assume his proper share if he is to remain free. Socialism is a philosophy of government entirely foreign to our way of life and to the traditions handed down from our forefathers. Few candidates for public office have dared to stand on a socialist platform, because Americans cherish the system which has brought them the highest standard of living in the world while providing the greatest possible degree of personal freedom. They are well aware of the national bankruptcy, the diminished productivity and the loss of incentive which Socialism has brought to those countries which have embraced it, sacrificing individual freedom in the hope of obtaining collective security."—Dr. William R. Richards, in *CONNECTICUT MEDICINE*.

"Blue Shield safeguards the basic freedoms of medical practice which are fundamental to good medical care. Blue Shield hopes to strengthen the doctor's traditional way of practicing medicine, not to change or destroy it. Blue Shield protects the patient's right to choose his doctor, his doctor's right to accept or reject the patient, and their common right to inviolate confidential relationship."—Dr. Robert L. Novy, Detroit, in *NEWSLETTER*, a publication of the National Association of Blue Shield Plans.

"If the doctors desire a fee-for-service, free-choice-of-doctor plan, and want it to compete successfully with other plans, then they had better stand directly behind their own plan, control it and see that it meets the needs of the community and not just a favored few."—Dr. Louis H. Bauer, New York City, in the same publication.

"The public will have faith in Blue Shield so long, and only so long, as we, the doctors, have faith in it and continue to endorse it."—Dr. J. Duffy Hancock, Louisville, in the same publication.

"Future freedom in the practice of medicine depends on how well we succeed in selling the Blue Shield idea of community service to the profession."—Dr. Arthur J. Offerman, Omaha, in the same publication.

"A team of Blue Shield Plans and cooperating phy-

sicians cannot be matched by any other program aimed at the same purpose."—Dr. Norman A. Welch, Boston, in the same publication.

"I believe that free medicine can survive only with Blue Shield. They are not identical entities, but they are so mutually interdependent that neither one will go very much farther without the active support of the other."—Dr. Donald Stubbs, Washington, D. C., in the same publication.

"Blue Shield remains the doctor's own generally accepted agency through which he can deliver what a large percentage of the public seems to want—a plan for prepaid medical care—and through which he can keep an intelligent, constructive control over his hire and the conditions under which care is provided."—From an editorial in the *NEW ENGLAND JOURNAL OF MEDICINE*.

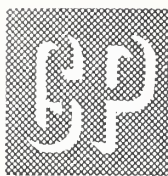
Finally, I should like to reiterate a statement that I made at a meeting of the National Association of Blue Shield Plans, in Miami, in April, 1959.

I think it is certain at this time that more and more of our people will purchase health services on the prepayment plan. In addition, they will want to avail themselves of more and more outpatient care, chronic disease coverage and nursing home benefits. The real issue here is whether this problem can be solved through voluntary health plans, particularly Blue Shield, or through compulsory and tax-supported health insurance.

Prepayment is here to stay. The great majority of people cannot or will not pay for health services from their current income or from their individual savings. The commercial insurance industry, as far as I know, has not asserted that it can solve the economic problem imposed by illness. Furthermore, health insurance company medical directors—or those of them with whom I have talked—seem generally agreed that if certain developments were to cause the failure of Blue Shield, the same substitute which replaced Blue Shield would also replace their firms. Blue Shield and the commercial health plans have had different and contrasting origins and modes of development, but they need each other. The competition between them is a fine thing. It benefits the public. Thus, it seems to me that Blue Shield and the commercial companies are both working for the common good.

We must correct the erroneous impression which some people have that if the federal government takes over, health coverage will be furnished without cost. Nothing is farther from the truth. At the same time, we must emphasize that the furnishing of health care by government agencies would almost certainly lower the quality of the care available.

Blue Shield must furnish a positive, workable voluntary plan for the health needs of the people—for the greatest possible number of people. By doing so, it will follow as the night follows the day that Blue Shield will also be good for the physicians.



Iowa Academy of General Practice

PROPOSAL FOR A CERTIFYING BOARD

V. L. SCHLASER, M.D.

DES MOINES

The American Academy of General Practice has a Committee on Minimum Uniform Standards of Education for General Practice, sometimes referred to as the MUSE Committee. The aim and goal of that Committee is to provide uniform standards in graduate education which will produce fully competent family physicians for tomorrow. In addition, there exists a Joint Committee made up of a MUSE sub-committee and representatives of the Section on General Practice of the American Medical Association, which is considering the creation of a Certifying Board for General Practice. This Joint Committee should not be confused with the basic MUSE Committee. The Board for the certification of General Practitioners, if and when it is established, will in no way replace the American Academy of General Practice, but will serve as an added incentive for future general practitioners.

The primary purpose of a Board of General Practice would be to encourage, recognize and reward fully adequate preparation and education of physicians for general practice. The method for its organization has been established by the Advisory Board for Medical Specialties and the American Medical Association. No deviation from this prescribed method is permitted, and therefore the Academy itself could never become a board. The creation of a Certifying Board in General Practice would be a task of great complexity and of great importance. Thus, it would have to be studied thoroughly from a great many angles.

The trend toward certification has accelerated very considerably in recent years. In fact, more than half of all board-certified physicians have become such since 1950. The first certifying board was the American Board of Ophthalmology, established in 1917. In 1934, there were only four boards, but by 1958 there were 19 examining boards and 73,105 certified members. In 1940, there were 5,115 residencies offered by 587 hospitals. In contrast, by 1957 there were 30,595 residencies offered in 1,276 hospitals, and 24,976 of those residencies were filled. The 1958 edition of the AMERICAN MEDICAL DIRECTORY showed a gain of 9,000

certified specialists, as compared with an increase of 4,000 general practitioners since the publication of the 1956 edition. Thus one can see the acceleration of board certification of specialists.

The medical student cannot help being influenced by the predominantly specialist-oriented teaching in medical schools. In the entire period of his undergraduate and graduate training, the student physician has very little opportunity for contact with general practitioners. Some medical schools are attempting to increase this contact of students with general practitioners by having students serve preceptorships. A few medical schools, where possible, have established departments or sections of general practice.

The preferential treatment accorded to board-certified physicians in the Armed Forces and Veterans Administration is well known. Discriminatory practices employed by the United Mine Workers of America, denying patients a "free choice of physician," have been well publicized. The Medical Institute of Meat Cutters Local 88, of St. Louis, contends that it permits a free choice of physician, but according to a statement from an officer of the organization published in the J.A.M.A.,* "Physicians must be local medical society members, must be faculty members of at least one of the two university medical schools in the St. Louis area, must be in private practice, must be board-certified in their specialty and must be a private hospital staff member." That seems a far cry from free choice of physician.

It is evident that board certification has become identified, in the minds of many people both in and out of medicine, with competence in medical practice. Thus, the medical student is impressed with the stature, prestige and favored financial position of the certified specialists, and it is only natural that his first goal is a diploma from his medical school and his second goal is certification by the board of his choice. Therefore, if board certification is the standard used as a means of comparison, the establishment of a Board of General Practice is a possible means of helping general practice and potential future general practitioners.

Here are several of the questions that have arisen as the establishment of a Board of General

* "AMA Council Meets With Ten 'Third Party' Medical Chiefs," J.A.M.A., 168:1366, (Nov. 8) 1958.

Practice has been considered. (1) Would board certification split the Academy of General Practice? The realistic handling of the "grandfather clause" would prevent this. By "grandfather clause," I refer to the provision under which "... every Active member of the Academy may be certified without examination." (2) Would board certification divide general practitioners into a first and a second class? Doctors in other segments of medicine have been divided into board-certified, board-eligible and non-board practitioners. A board would make second-class physicians only of those who by instinct, lack of character, lack of training, lack of ambition or something else would be second-class physicians regardless of whether or not a board existed. (3) What effect would a board have on the Academy's postgraduate study requirements? Postgraduate study is the primary means of improving and maintaining competence among Academy members. The Joint Committee has in mind a certification for a specifically limited period, just like membership in the AAGP, which expires after three years unless the conditions for renewal have been met. Thus, a board that required recertification would *strengthen* the Academy's postgraduate program.

(4) Would a board dictate an individual physician's scope of practice? In general practice, the local needs and customs and the individual physician's scope of competence are the actual determinants of his scope of practice. (5) Would a board require so much graduate training as to drive physicians into specialties? If the graduating student is interested in a specialty, he should by all means take the required training to qualify himself in his field of interest. However, there is a continuing need for family physicians qualified to give total care to family units. The rewards, material and otherwise, are great enough to attract students to become family physicians. A certifying board that requires resident training as a condition for a qualifying examination is a challenge, regardless of what board it may be. Those desiring to become qualified family practitioners would have the same incentive, the same goal and the same eventual reward as have those who are entering other fields of practice.

The statements in the preceding paragraphs have been presented as "food for thought." In the United States of America, the medical profession is constantly striving to improve itself. Any ideas, opinions or thoughts that you, as a physician, may have in regard to the establishment of a Certifying Board of General Practice will be welcome in the form of a signed letter, mailed to the Iowa Chapter of the American Academy of General Practice, 911 Bankers Trust Building, Des Moines 9, Iowa. It will be forwarded to MUSE, Sub-Joint Committee of the AAGP, for consideration in the survey that it is making.

MINNESOTA ACADEMY FALL REFRESHER

The Minnesota Academy of General Practice will hold its annual Fall Refresher program at the Radisson Hotel, Minneapolis, on Tuesday and Wednesday, September 22 and 23, 1959. All physicians are welcome.

Tuesday, September 22

- 8:00 a.m. Registration, and clinics and rounds at University of Minnesota
- 2:00- 2:45 p.m. "Intrauterine Transmission of Infection to the Fetus"—Edith Potter, M.D., Chicago
- 2:45- 3:05 "Current Virus Problems"—Herman Kleinman, M.D., chief of Section on Chronic Diseases, Minnesota State Board of Health
- 4:00- 4:40 "Endocrine Therapy in Obstetrics and Gynecology—a Reevaluation"—Ralph Reis, M.D., Chicago
- 4:45- 5:10 "Chemotherapy in Tuberculosis"—Kathleen Jordan, M.D., Minnesota Tuberculosis Association
- 6:30 BANQUET

Wednesday, September 23

- 8:50- 9:15 a.m. "New Drugs"—Raymond Beiter, M.D., Minneapolis
- 9:20-10:00 "The Classification and Management of Cancer of the Breast"—George Pack, M.D., New York City
- 11:00-12:00 PANEL DISCUSSION—CARDIAC EMERGENCIES
Travis Winsor, M.D., leader, Los Angeles
Arthur Kerkhof, M.D., Minneapolis
Howard Burchell, M.D., Rochester
Milton Hurwitz, M.D., St. Paul
- 12:00 m. ROUND TABLE LUNCHEONS
- 2:00- 2:40 p.m. "The Tired Mother Syndrome"—Leonard Livshin, M.D., Cleveland
- 2:45- 3:05 "Age of Selection for Elective Surgery in Children"—Tague Chisholm, M.D., Minneapolis
- 4:00- 4:20 "Office Ophthalmology and the Busy Practitioner"—Malcolm McCannel, M.D., Minneapolis
- 4:25- 5:10 "Basic Research in Female Physiology: The Orgasm"—William Masters, M.D., St. Louis

Attend the

Annual Meeting & Scientific Assembly

Iowa Academy of General Practice

Savory Hotel, Des Moines

September 27-29, 1959

(For program, see August JOURNAL, p. 546)



THE DOCTOR'S BUSINESS

Tax Savings via the Short-Term Trust

HOWARD D. BAKER

WATERLOO

Even though the U. S. Internal Revenue Service has recently taken a firm stand against the use of the short-term trust on such property as medical buildings and equipment, there still are some uses to which doctors can put this tax-saving device, for many of them own other types of property to which the tax collectors' objections don't apply.

The most logical use for such a trust is for financial needs of a personal and non-deductible nature, and the trust can consist of rental property, a farm, cash or securities. Education of one's children or the support of his dependent relatives are the commonest objectives.

What are the advantages of such a trust? First, it provides for a planned accumulation of funds to meet these needs, without imposing a financial hardship upon the doctor when the needs finally materialize. By setting up the short-term trust, he has made specific provision for the availability of relatively large sums of money through systematic accumulation over a period of years.

Second, the doctor makes himself eligible for substantial tax savings through the use of the short-term trust, thus in effect forcing the Treasury Department to contribute generously to the fund.

A SAVING OF \$7,050 IN TEN YEARS

To illustrate the tax-saving feature, let us assume that Dr. A is in a 47 per cent federal income tax bracket, and that he has three children for whom he expects to spend \$15,000 for educational purposes. To accumulate \$15,000 over the 10-year *minimum* period during which such a trust must last will require earnings of \$1,500 annually. If he has rental property, a farm, securities or even cash, it almost certainly will yield at least that amount.

The annual accumulation of \$1,500 will accrue to each of his children at the rate of \$500 each, and since this income is diverted from Dr. A's

tax return, he will save \$705 (47 per cent of \$1,500) per year, or \$7,050 over the 10-year period. Thus, the over-all result of this trust will be that \$15,000 is accumulated in the names of Dr. A's children to finance their education, but only \$7,950 of that amount will have come from money that Dr. A might otherwise have been able to use.

If each child's annual \$500 share of the income is reinvested, that too will earn income, increasing the available educational funds. At the end of the 10-year period, the property or securities in the trust will revert back to Dr. A's ownership, and the trust will cease to function.

What better way can you think of for getting a 47 per cent discount on the cost of educating your children?

The two major requirements of the short-term trust are that it must be created for a *minimum period of 10 years*, and that it must be *absolutely irrevocable*. The trust agreement and related instruments should be handled by an attorney experienced in trusts, for though the trust is relatively simple, failure to qualify it properly could result in loss of tax advantage.

THE GIFT TAX LIABILITY IS NEGLIGIBLE

There is a gift-tax consideration involved in such a trust, but it isn't an important one. The valuation of a 10-year gift of the right of income from property is approximately 30 per cent of the market value of the property at the time of the gift. In the preceding example, if the current value of the property were \$30,000, the gift valuation would be approximately \$9,000. This amount divided among the donees wouldn't even use up the annual exemption allowed for gifts.

Though such a trust is certainly not the answer to all financial planning problems, it does provide an opportunity that may fit your individual circumstances. If you are interested, it will be worthwhile for you to consult your attorney in regard to the use of the short-term trust.

In the Public Interest



Financial Help for Medical School Students

The Educational Loan Fund can be counted among the unqualifiedly successful projects that the Iowa State Medical Society has instituted in the public interest. It has been the means of enabling a very considerable number of young men to complete their medical education; it has doubtless helped to influence a number of them to establish practices in this state rather than elsewhere; its funds have grown precisely according to plan; and it remains a thoroughly businesslike, thriving concern.

MODEST BEGINNINGS

The Iowa State Medical Society first entered medical-student loan activity in 1951. The problem was not one with which a commercial bank could cope, for at the time they need money, medical students don't have jobs or immediate prospects of professional income, and of course they have no property to mortgage. Several practicing physicians had previously been attempting to meet the need out of their own pockets.

At the start, the ISMS made its loans from the Baldrige-Beye Fund, an account from which it had awarded prizes in medical-student essay contests for several years. In 1951, the Society paid \$1,850 into the Baldrige-Beye account as had been its custom—approximately one dollar for each of its members—and it added \$2,200 in 1952. But the requests for loans exceeded resources by a wide margin, so the Society established the ISMS Educational Loan Fund and asked individual physicians either to give or to lend it money. In addition, a line of credit was established at an Iowa City bank. Then, in 1955, with the objective of accumulating \$150,000 of permanent capital for the Fund, the ISMS voted a \$10 per year increase in dues for the next five years, all of which was to be earmarked for it.

According to the rules established at that time

—ones that have remained virtually unchanged ever since—loans are made to medical students who are residents of the State of Iowa, or who are former residents now taking training elsewhere. Eligibility is determined by a committee consisting of the president and the chairman of the Board of Trustees of ISMS, a third physician (presently Dr. G. H. Scanlon, of Iowa City), and a banker (presently Mr. Ben S. Summerwill, of Iowa City). Generally speaking, borrowers must be junior or senior students in medical school, internes or residents, but exceptions are occasionally made in the cases of sophomore or freshman medical-school students.

THE FUND NOW CONTAINS UPWARDS OF \$150,000

The five-year accumulation of special dues, plus the outright gifts and the investments of individual physicians and county medical societies have built up the capital of the ISMS Educational Loan Fund precisely to the level that had been hoped for, and indeed predicted. Moreover, the total was swelled this past spring by contributions made to a subsidiary, the Dr. L. A. Coffin Memorial Fund, in the amount of \$566.80. Unlike the remainder, the Dr. Coffin Fund is available *only* for loans to medical students who offer assurances that they intend entering general practice in Iowa.

SOURCES OF ISMS EDUCATIONAL LOAN FUND CAPITAL

Loans from doctors and from medical societies ...	\$45,900.00
Gifts from doctors and from medical societies ...	6,070.20
Special ISMS dues	
1955	\$20,876.00
1956	21,115.00
1957	20,827.50
1958	21,042.50
1959 (through July 31)	21,190.00
	<hr/>
	105,051.00
Dr. L. A. Coffin Fund (contributions)	566.80
Interest on Treasury bills	160.06
	<hr/>
	\$157,748.06

During the period between April, 1953, and June, 1954, when funds available for loans were farthest short of the amount for which there were requests, the Educational Loan Fund borrowed a total of \$18,900 from the Iowa State Bank and Trust Company, Iowa City. This amount has now been repaid in full.

The first interest payments, totaling \$8,154.91, were made recently to the individuals and medical societies that let the Educational Loan Fund have their money on an investment basis. It is hoped that hereafter it will be possible to make similar payments semi-annually, and principal will be repaid on the tenth anniversaries of the investments.

THE LOAN EXPERIENCE HAS BEEN ENTIRELY
SATISFACTORY

On the average, about 18 or 20 loans are made each year from the ISMS Educational Loan Fund, and although there have been ones in amounts as large as \$3,700, the average size is about \$2,000. The money is issued to borrowers in monthly allowances carefully budgeted to make up the differences between their resources and their modest needs. If the student has nothing to hypothecate, the loan is secured by a term life insurance policy. Though other lending agencies are not permitted to acknowledge it as a fact, a medical student of good character and proved ability is a fine loan risk, and his untimely death is virtually the only untoward possibility against which the lender needs protection.

The Iowa State Bank and Trust Company has the responsibility of securing repayment of the loans, and though there are some borrowers who initiate arrangements for repayment before they are asked, the Bank makes a practice of sending out letters to all of them shortly before the start of the borrower's third year in private practice. Installment repayment plans are made at that time, usually on the basis of \$100 per month, including simple interest at five per cent on the face amount for the previous years, and thereafter on the decreasing balance.

To date, there hasn't been a single default, and many borrowers have undertaken repayment in advance of the due date. Thus, collection has been unqualifiedly excellent.

ISMS EDUCATIONAL LOAN FUND RECORD AS OF
JULY 31, 1959

Total amount of 89 loans made	\$136,833.42
Less principal repaid	24,325.84
Total amount of loans outstanding	\$112,507.58

MANY BENEFICIARIES OF THE FUND NOW PRACTICE
IN IOWA

Of the 89 men who have borrowed funds from the ISMS lending institution, 17 are still students in medical school; 11 are internes; and 6 are in military service. Thus, it is too early to tell where 34 of them will eventually engage in the private practice of medicine. But of the remaining 55 men, 32 are now practicing medicine in this state, nearly all of them in small towns. Twenty-eight of the 89 are currently members of the ISMS, and some of the others will join within the next few months.

PRESENT STATUS OF LOAN FUND BORROWERS

Physicians practicing medicine in Iowa	32
Medical students at S.U.I.	17
Internes	—
In Iowa hospitals	8
In hospitals elsewhere	3
.....	11
Residents	—
In Iowa hospitals	3
In hospitals elsewhere	2
.....	5
Physicians serving in the Armed Forces	6
Physicians in private practice or USPHS work outside Iowa	7
Others	11
.....	89

Generally speaking, it is doubtless true that lack of money is far more frequently an excuse than a real reason for a talented individual's quitting school or choosing a vocation for which the educational requirements are relatively brief. But in this regard as in so many others, medicine is different. The professional training that precedes the practice of medicine is by far the longest and the most expensive. Furthermore, the junior and senior years of medical school are essentially 12-month sessions of full days and full nights. No one can hope to hold a part-time job then! Considerable numbers of medical students marry during or before those last two years, and it is quite true that their wives, in many instances, help to support them by working at full- or part-time jobs. But the births of children interrupt such arrangements.

No one can say how many of the 89 men whom the ISMS Educational Loan Fund has helped would have dropped out of medical school if such aid had not been available. But it is reasonable to assume that many of them would have done so. Thus, the Fund has been and continues to be a very fine thing, indeed!

STATE DEPARTMENT OF HEALTH


COMMISSIONER

FLUORIDES IN IOWA WATER SUPPLIES

Prior to 1950, because of high concentrations of fluoride ion in some Iowa public water supplies, causing fluorosis (mottled enamel), efforts were made by the Division of Dental Hygiene of the State Department of Health to induce communities where this condition existed to change their water supplies to secure a lower concentration.

In 1937, Ankeny dug shallow wells and was able to secure a supply with 0.8 p.p.m. fluoride. The old supply had contained 6.0 to 8.0 p.p.m. That was the only Iowa community to change its supply, despite the fact that there were 24 supplies containing concentrations above 2 p.p.m.

The Division of Public Health Engineering made a study of fluoride content of community water supplies, and in 1950 printed a pamphlet entitled "Fluoride in Public Water Supplies of Iowa" listing all cities and towns, with the fluoride concentration of each source.

In 1951, Waukon and Dubuque started artificial fluoridation. As of July 14, 1959, there were 29 fluoridation projects in Iowa, as follows: Waukon, Dubuque, Cedar Rapids, Davenport, Bettendorf, Hartley, Clarinda, Fairfield, Manchester, Eagle Grove, Creston, Audubon, Perry, Iowa City, Coralville, University Heights, Keokuk, Emmetsburg, Ames, St. Ansgar, Ottumwa, Estherville, Sac City, Corning, Cedar Falls, Marshalltown, Chariton, Guthrie Center and Algona.

The city councils in Newton, Glenwood, Sioux Rapids, Sigourney, Greenfield and Des Moines have ordered equipment and should be ready to start in the near future. Indianola and Harlan started fluoridation, but then brought in new wells with high enough concentrations of fluoride to warrant a discontinuance. They are now mixing the new supply with the old to obtain an optimum concentration. Knoxville is the only Iowa community that has discontinued fluoridation after starting the project.

As fluoridation started in each community, a survey was made of dental conditions found in constant residents. These records are now compared with surveys made after five years or longer of fluoridation. The following is a summary of the first 10 of these surveys:

TEN SURVEYS MADE AFTER FIVE YEARS OF FLUORIDATION

Age	Reduction in Decayed, Missing or Filled Permanent Teeth	Reduction in Decayed, "Extraction- Indicated" or Filled Baby Teeth	Per Cent of Children Caries-Free
5	37%	44%	(1951-1953) 16.9 (1956-1958) 37.4
6	66%	32%	(1951-1953) 13.5 (1956-1958) 24.2
7	43%	15%	(1951-1953) 7.5 (1956-1958) 12.6
8	22%	4%	(1951-1953) 9.8 (1956-1958) 10.7

In the 1951-53 examinations 5,538 children were examined, and in the 1956-58 examination 4,217 children were examined.

SURVEY MADE IN DUBUQUE 7½ YEARS AFTER THE START OF FLUORIDATION

Age	Reduction in Decayed, Missing or Filled Permanent Teeth	Reduction in Decayed, "Extraction- Indicated" or Filled Baby Teeth	Per Cent of Children Caries-Free
5	85%	54.2%	(1951) 15.1 (1959) 41.0
6	72.5%	48.4%	(1951) 11.3 (1959) 33.0
7	67.6%	42.8%	(1951) 4.6 (1959) 21.6
8	57.8%	34.0%	(1951) 4.2 (1959) 15.2
12	27.4%	—	(1951) 7.9 (1959) 8.0
13	30.0%	—	(1951) 0.0 (1959) 7.0

In 1951 there were 2,326 children examined, as compared with 2,172 in the 1959 survey.

Please Mark Your Calendar

ISMS ANNUAL MEETING

April 24-27, 1960

Veterans' Memorial Auditorium

Des Moines

DEDICATION PROGRAM AT MERCY,
DES MOINES

The medical staff of Mercy Hospital, Des Moines, is to present a dedication program on September 23, and wishes to have as its guests physicians and their wives from all of Iowa.

The new wing and modernized portion of the hospital includes a new operating room suite, a new dietary department, a new delivery room, a new nursery, a new pediatric department, new pathology laboratories, new business offices and a new radiology department. When completed, there will be a new outpatient department, a new doctors' auditorium, a new chapel and new living quarters for the Sisters. Thus, Mercy Hospital, Des Moines, will have one of the most up-to-date physical plants in the Midwest, with a total of 315 beds. Approved by the Joint Commission on Accreditation, the hospital has approximately 250 doctors on its staff. It carries out numerous educational training programs, including an accredited school of nursing, an interne and resident training program, and a medical technology training program.

The activities being planned for Wednesday, September 23, are to begin with a noon luncheon at the hospital. A scientific program will follow, including addresses by Dr. Charles W. Mayo, of Rochester; Dr. Herbert E. Schmitz, of Chicago; and Dr. Arnold S. Jackson, of Madison. Afterward, there will be conducted tours of the hospital. At 6:30 p.m., there will be a banquet at the Savery Hotel, at which Mr. Arthur S. Flemming, Secretary, of Health, Education and Welfare, will be the speaker.

For the ladies, a noon luncheon and style show is being arranged by the Mercy Hospital Guild. The ladies are, of course, welcome to join the tours of the hospital and to attend the banquet.

SYMPOSIUM ON DIABETES

The Chicago Diabetes Association, Inc. will present its Third Annual Symposium on Diabetes Mellitus at Thorne Hall, Northwestern University, 740 North Lake Shore Drive, Chicago, on Thursday, October 1. There will be a \$25 enrollment fee, but members of the American Diabetes Association, the Chicago Diabetes Association, medical students, internes and residents may attend without charge.

Morning

- 9:00 "Regulatory Effects of Pituitary and Adrenal Glands on Carbohydrate Metabolism"—Richard C. de Bodo, M.D., New York University
- 9:55 "Hepatic Mechanisms in Carbohydrate Metabolism"—Rachmiel Levine, M.D., University of Chicago


- 11:05 "Current Concepts of Insulin Antagonists"—James B. Field, M.D., National Institute of Arthritis and Metabolic Diseases, Washington

Afternoon


- 2:00 "Recent Work on Glucagon" (Woodyatt Memorial Lecture)—Charles H. Best, M.D., University of Toronto
- 3:10 "Interrelationship of Protein and Carbohydrate Metabolism"—Francis D. W. Lukens, M.D., University of Pennsylvania.

MORBIDITY REPORT FOR MONTH OF
JULY—1959

Disease	1959 July	1959 June	1958 July	Most Cases Reported From These Counties
Diphtheria	0	1	2	
Scarlet fever	103	102	76	Jefferson, Johnson, Polk
Typhoid fever	0	1	3	
Smallpox	0	0	0	
Measles	90	659	587	Clay, Des Moines, Linn, Scott
Whooping cough	62	18	9	Des Moines, Dubuque, Polk
Brucellosis	13	18	12	Dubuque
Chickenpox	48	336	36	Clay, Polk
Meningococcic meningitis	1	1	0	Linn
Mumps	52	225	190	Linn
Poliomyelitis	96	39	0	Boone, Jasper, Polk
Infectious hepatitis	13	5	5	Scott, Woodbury
Rabies in animals	24	10	14	Keokuk, Story, Webster
Malaria	0	0	0	
Psittacosis	0	0	2	
Q fever	0	0	0	
Tuberculosis	20	41	49	For the state
Syphilis	73	80	97	For the state
Gonorrhea	90	63	59	For the state
Histoplasmosis	0	0	2	
Food intoxication	0	0	0	
Meningitis (type unspecified)	0	1	0	
Diphtheria carrier	0	0	7	
Aseptic meningitis	5	1	0	Polk
Salmonellosis	2	1	3	Davis, Polk
Tetanus	0	0	0	
Chancroid	1	0	0	Chickasaw
Encephalitis (type unspecified)	0	2	0	
H. influenzal meningitis	0	0	0	
Amebiasis	3	0	2	Marion, Pottawattamie
Shigellosis	3	0	0	Wright
Influenza	0	1	0	



Woman's Auxiliary News



GOOD GOVERNMENT IS EVERYBODY'S RESPONSIBILITY

Your Legislative Committee is proud of the way that you and your husbands have responded to its call for immediate action on the Forand Bill. Freedom is the very foundation of our way of life, and we must not only oppose schemes for letting the government take over the program of medical care but must also proceed to build a firm and workable system for voluntary health insurance for the aged in Iowa. There must be no "if's."

To make this program a success, we must work together and avoid becoming divided. This means that we shall have to understand the aims, and be able to speak intelligently and with authority and belief. Let us now consolidate our gains by standing firmly behind the men and women who have demonstrated their interest and ability to cope with a basic problem in our society. We can and will make the program of voluntary health insurance a success in Iowa.

In speaking of the responsibility of the free man, Dr. Virgil M. Hancher, president of the State University of Iowa, says, "The pillars of our freedom are not self-sustaining. They are rooted in the *practice* of citizen responsibility; they exist and are strengthened through the *actions* of freedom-loving people. In each changing age with its new dangers, the perpetuation of our blessed liberties lies in the recurring proof of the principles on which they rest. Free men will remain free as long as they are aware of their responsibilities."

Our responsibilities are "to know the score." Our doctors know that the essentials of good medical care would be compromised under government management. It is naive indeed for us to believe that Congress will take our money by taxation and allow it to be spent without making sure that the government maintains firm control.

Speaking as a physician, Dr. Judd, a congressman from Minnesota, says, "It is not enough for us to be right; we have to reach the public and the politicians, not to put something over on them, but to help them understand the situation so that no one else can put something over on them."

With a great expenditure of effort and time, our State Medical Society has devised and is promoting an overall program to help solve the med-

ical care problems of the aged and the lower-income groups. Let us not falter nor be a house divided. Let us insure the success of this program by positive action. Iowa can lead the way!

You have all exercised your "right to write." Now, won't you exercise your "right to talk"? Your congressman will be home by the time this reaches you. Please follow through by discussing the Forand Bill with him, and by familiarizing him with our Society's answer to the health problems of the aged. If you wish extra materials, write to the State Medical Society or to your Legislative Committee.

—Jane King, chairman, and
Janet Ellis, co-chairman,
Legislative Committee

GOVERNOR'S CONFERENCE ON CHILDREN AND YOUTH

State House, Des Moines, September 25, 1959

Governor Herschel C. Loveless and the Iowa Commission on Children and Youth are joining in calling the annual Governor's Conference on Children and Youth, to be held in the State House, at Des Moines, on September 25.

This is an important meeting, for it is intended to provide the widest possible citizen participation in concrete planning in the major areas of child welfare and training prior to the Golden Anniversary White House Conference, which will be held in Washington, D. C., in March, 1960.

The major speaker will be Mrs. James Blue, of Denver, Colorado, president of the National Association of Boards of Managers of State Universities and Allied Institutions—i.e., the national association of boards of regents—and vice-chairman of the President's Commission on Children and Youth.

The Conference will begin at 9:15 a.m., and will continue until late afternoon. Everyone who is interested is urged to attend and to encourage youngsters to attend. Youths will have an important part in the meeting.

Address any inquiries to the Executive Secretary, Iowa Commission on Children and Youth, State Office Building, Des Moines 19.

News Notes

The Grundy County Auxiliary honored **Mrs. Paul LaPorte**, of Wellsburg, at a pot-luck luncheon in the home of **Mrs. H. L. Mol**, at Grundy Center, on Wednesday, July 22. It was a going-away party, for Dr. LaPorte and his family are moving to Des Moines, where he will take a residency in pediatrics at Raymond Blank Memorial Hospital.

* * *

Mrs. Lester R. Hegg, of Rock Valley, a past-president of the Iowa Auxiliary, has been very busy this summer with a community project. She was chairman of the Rock Valley Community Flower Show, "Fantasy of Flowers," which was held on August 7.

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Among the midsummer vacationers at Lake Okoboji were four Des Moines doctors and their families—the **William Shinkles**, the **E. T. Burkes**, the **Sam Zoecklers** and the **James Dickenses**.

* * *

Dr. and Mrs. Howard Ellis, of Des Moines, returned a few weeks ago from a trip to northern Minnesota and Kenora, Ontario.

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Dr. and Mrs. George Marquis, of Des Moines, are home after a trip to New Orleans for the convention of Cosmopolitan International. Dr. Marquis is the newly elected Cornbelt Federation governor. Before returning, they visited their son-in-law and daughter, **Lt. and Mrs. L. R. Gray**, and granddaughter **Laurie**, in Corpus Christi.

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Dr. and Mrs. Elmer A. Vorisek, of Des Moines, recently finished a trip to and from the Pacific Northwest. They traveled to Seattle, Victoria and Vancouver, and returned by way of Lake Louise, Winnipeg and St. Paul.

* * *

Dr. and Mrs. Lester D. Powell, of Des Moines, took a crowded two-week vacation, in which they spent a few days each in California, at Lake Vermillion, in far northeast Minnesota, and in Owatonna, in the southern part of that state. Their son-in-law and daughter, **Mr. and Mrs. John Alexander**, live in Owatonna.

Dr. and Mrs. Daniel F. Crowley, Jr., and children **Cathleen** and **John**, of Des Moines, spent a three-week vacation in New England. For two weeks, they were at Lake Sebec, in Dover-Foxcroft, Maine. Mrs. Crowley's father, **Mr. John F. Benjamin**, of Holton, Maine, accompanied them there.

* * *

Dr. and Mrs. Dennis Kelly, of Des Moines, spent a two-week vacation at Shell Lake, in Wisconsin.

AMERICAN MEDICAL EDUCATION FOUNDATION

Woman's Auxiliaries throughout the country contributed \$140,500 to the AMEF in 1958-1959. This total included gifts of \$129,787.31 from state and county Auxiliaries; \$5,000 from the National Auxiliary in memory of deceased members; and \$5,712.69 from members who "voted 'yes' for tomorrow's doctors" by means of the direct-mail ballot.

The total contribution from Iowa (including direct-mail gifts received by June 30, the end of the National Auxiliary's fiscal year) was \$426.65. This amounted to no more than 40 cents per capita, on the basis of membership figures at the national level on June 30. Iowa should increase its gifts for this cause to at least \$1 per capita in the coming year.

Ten states and five counties were honored at Atlantic City for their gifts to AMEF. The states to which awards of merit were presented were Nevada, Alaska, Wyoming, Hawaii, New Hampshire, Indiana, Ohio, Texas, North Dakota and Wisconsin. For the first time, awards were given to the counties having the largest contributions. For Auxiliaries having between 1 and 25 members, the winner was Pettis County, Missouri; between 26 and 60 members, Navarro County, Texas; between 61 and 100 members, Wayne-Southern County, Michigan; between 101 and 200 members, Albany County, New York; and over 200 members, Cuyahoga County (Cleveland), Ohio. In the Iowa rating, Grundy County was highest (contributions per capita), and will receive a certificate of recognition.

Help your central office to maintain an accurate mailing list. Send your change of address promptly to **Mrs. Lammey, 529-36th Street, Des Moines 12, Iowa.**

WOMAN'S AUXILIARY TO THE IOWA STATE MEDICAL SOCIETY

President—**Mrs. E. A. Larsen**, 323 Oak Street, Centerville
President-Elect—**Mrs. R. F. Nielsen**, 919 Washington Street, Cedar Falls

Secretary—**Mrs. L. F. Henderson**, 304 Seerley Street, Cedar Falls

Treasurer—**Mrs. J. H. Matheson**, 4321 California Drive, Des Moines 12

Editor of the NEWS—**Mrs. H. C. Merillat**, 116 Lincoln Place Drive, Des Moines 12



Scientific Articles

The 1959 Authur Erskine Memorial Lecture

Important Non-Biological Contributions To Radioisotopic Diagnosis

RALPH M. KNISELEY, M.D.

OAK RIDGE, TENNESSEE

THE USES FOR tracer isotopes have been growing ever more numerous throughout the past 25 years, but the first of them had been found many years earlier. In 1911, Charles De Hevesey, a young Hungarian-born chemist, went to work with Ernest Rutherford in England. In the neighborhood of the laboratory, he found a boarding house and with other young students took his meals there. The food was poor, being worth far less than even the modest prices that were asked. The students became suspicious, indeed, that the uneaten food came back again in the form of another hash or stew on subsequent evenings. De Hevesey was attempting to separate Radium D from lead, and he had at his disposal some radioactive material. He and the other boarders plotted to catch the landlady in her deception, and among the food scraps on their plates they sprinkled some of this material. The following evening when the hash was served, off went the hungry boarders to the laboratory, where they were able to detect the radioactive tracer. This was the first known use of tracer methods employing radioactive materials.

Later, in 1912, De Hevesey published his first paper on the use of a radioisotope of lead as a tracer, reporting, you may be sure, on a much more "scientific" experiment.

Advances in atomic medicine have been rapid,

Dr. Kniseley was pathologist at Eden Hospital, in Castro Valley, California, and a consultant at Donner Laboratory, University of California. He is now a consultant at the Oak Ridge Institute of Nuclear Studies and a member of the Council on Radioisotopes of the American Society of Clinical Pathologists.

and in consequence, the current medical literature contains many survey papers. To spare you a painful repetition of that material, I should like to share instead another aspect of this enterprising medical sub-specialty.

In this particular field, I have been impressed with the contributions that have been made by physicists and experts in electricity and electronics—scientists in non-biological pursuits. Certain key discoveries that account for the present state of medical isotopology have come about through studies far removed from the field of medicine. After devising a rather arbitrary list of the key pieces of equipment or apparatus important in radioisotopic diagnosis, I set out to learn how they came into being.

PRODUCTION OF RADIOISOTOPES

Two gigantic pieces of apparatus provide us with artificial isotopes: the cyclotron and the atomic reactor. From these machines, nuclear particles such as protons, neutrons or alpha particles can be introduced into natural nuclei so that nuclear transformations are feasible in more than minute experimental amounts. The unstable radioactive isotopes thereby created "decay" by giving off radiations of various sorts. These radiations are measured and recorded quantitatively in radioactive isotopic diagnosis.

The story of the cyclotron goes back to 1928, when Ernest Lawrence came to the University of California as an assistant professor of physics. At that time he was lured away from his interest in

the electrical aspects of physics into nuclear research by the stimulus of the discoveries of the Rutherford school. One evening early in 1929, as he was glancing over current periodicals in the University library, he happened upon an article in a German electrical engineering journal by Wideroe dealing with multiple acceleration of positive ions. Without actually reading the article, his reading knowledge of German being sketchy, he merely looked at the diagrams and photographs of the apparatus.^{3, 16} There and then he hit upon the idea of the cyclotron, and in a few moments had sketched out its essential features. Charged particles, usually protons or neutrons, were to be moved in spiral paths by a high-intensity magnetic field. Acceleration was to be achieved by an alternating electric current of high frequency synchronized to the time required by the particle in completing one revolution. Experiments with crude models confirmed the theory.¹⁶

Then it was learned that the high-energy accelerated particles could be shot into targets of stable elements, and radioactive elements unknown in nature were created. By 1934, a working cyclotron at the University of California was producing in small amounts a variety of now common radioactive elements such as sodium, phosphorus and iodine, as well as many other newly created unstable elements that proved to be priceless tools in the hands of scientists. Prior to the end of World War II, all of the available artificial radioactive isotopes used in research were prepared in cyclotrons, and even today certain of the radioactive isotopes are obtainable only from the cyclotron. However, it was not until the atomic "pile" or reactor began producing radioisotopes that the costs were reduced, and large amounts were made accessible for routine use.

The story of the development of the nuclear reactor is one of the most dramatic in the history of science. No one individual can claim credit for the invention. In 1938 fission was recognized, and in 1939 the significance and potential of this phenomenon were predicted properly by many theoretical physicists. It was soon suspected that a chain reaction was feasible, with liberation of tremendous energy. By 1938, Hitler and Mussolini had clarified their natures to the thinking people of Europe, and a stream of refugees were pouring out of Italy and Germany. Among them were Lisa Meitner, an Austrian Jewish physicist, and her nephew Otto Frisch. After their arrival in Stockholm and Copenhagen, they were still able in 1938 to communicate with Germany. They learned that two of their former colleagues, Fritz Strassman and Otto Hahn, continuing work begun by Dr. Meitner at the Kaiser Wilhelm Institute in Berlin, had discovered to their surprise that barium was present in samples of uranium bombarded with neutrons. The two refugees daringly proposed that Strassman and Hahn had created barium by the fission

of uranium into approximately two equal parts, and in an experiment confirmed their theory!

By coincidence, the great physicist Niels Bohr, of Copenhagen, was at that moment about to embark for America. He brought with him this momentous and revolutionary discovery. At the pier to meet him as he alighted from the Swedish liner *Drottningholm* were two other fugitives from Europe, the Italian physicist Enrico Fermi and his wife Laura.⁶ Fermi, also a fugitive from Fascism, had arrived in America only two weeks earlier. In the previous December (1938), he had taken his family with him to Stockholm to receive the Nobel prize for the discovery of new elements through neutron bombardment. Rather than return to Rome and risk the rising anti-semitic program that might involve his wife, he fled to New York to accept a position at Columbia University.

Fermi's genius was caught up in the news imparted by Bohr, and quickly he developed the hypothesis that fission of uranium might result in the emission of more neutrons, and further that tremendous energy would be released. Moreover, a self-sustaining chain reaction might thereby be created. The design worked out arranged alternating layers of uranium and graphite. The graphite slowed neutrons to a speed at which the uranium-235 nucleus could more freely accept neutrons. Long rods of cadmium placed in the "pile" were absorbers of neutrons, serving to control the reaction.

Fermi and many other brilliant people pushed ahead to complete the device under the terrible stimulus of World War II. Eventually, on December 2, 1942, the first self-sustaining chain reaction took place in the nuclear reactor built at the University of Chicago. It was built to prove the feasibility of a chain reaction, the basis for the success of an atomic bomb. In addition, the "pile" produced plutonium as bomb material. In the future, the nuclear reactor promises to compete successfully with conventional sources of power. The production of radioisotopes for use in medicine is merely an incidental byproduct in the economics of the reactor.

INSTRUMENTS FOR MEASUREMENT

Commonly employed clinical isotope tracer methods are summarized in Table 1. The list is not inclusive and does not contain many of the valuable isotope methods used in clinical investigations of human disorders. For those of you who wish detailed information, there are several very good books on the clinical uses of isotopes, for example: Beierwaltes, Johnson and Solari;² Fields and Seed;⁷ and Quimby, Feitelberg and Silver.¹⁹ The equipment needed for clinical use is designed to measure radioactivity externally in certain organs or parts of the body, or to measure the radioactivity of samples of blood, urine or feces. To this

TABLE 1
CLINICAL USES FOR ISOTOPE TRACERS

Test	Tracer	Assay
Thyroid Function	I-131	External Blood Urine
Blood Volume		
Plasma Volume	Albumin I-131	Blood
Red Cell Mass	Cr-51; P-32	Blood
Blood Loss	Cr-51	Blood; Feces; Urine
Hematologic		
Vitamin B-12 Absorption	Co-60	Urine; Blood
Red Cell Survival	Cr-51	Blood
Iron Kinetics	Fe-59	Blood
Pancreatic Function		
Fat Absorption	Triolein I-131	Feces; Urine; Blood
Miscellaneous		
Liver Function	Rose Bengal I-131	External
Cardiac Output	Albumin I-131	External
Tumor Localization	P-32; I-131	External

end, certain pieces of apparatus have become as commonplace in a complete clinical laboratory as a flame photometer. The essentials are to provide (1) a detector for the quantitative measurement of radioactive emissions and (2) devices for re-

cording the large number of "counts" that have been detected (Figure 1).

The Geiger-Müller tube was for a long time the basic detector tool for measuring various photons, particularly beta particles or electrons. Until about seven years ago, it was the only commonly used detector for clinical tracer work. This invention came in 1928,⁸ through the genius of two Germans, Hans Geiger and Walther Müller, then working at the Institut Der Universitat, Kiel, Physikalischs. Remember that in 1928 artificial radioactivity was unheard of, and the acceleration of nuclear particles by means of the cyclotron was yet to come. The tube was designed for the detection and quantitative measurement of extremely weak radiations from radium and allied compounds, and measurement of x-ray beams, cosmic rays or naturally occurring radioactive potassium. When the inventors said, "...We believe the counting tube will prove useful in the solution of many problems in modern physics because of its sensitivity and simplicity,"⁹ they made what was probably the prize understatement in the scientific writing of that decade. Who would have dared predict that thousands of these instru-

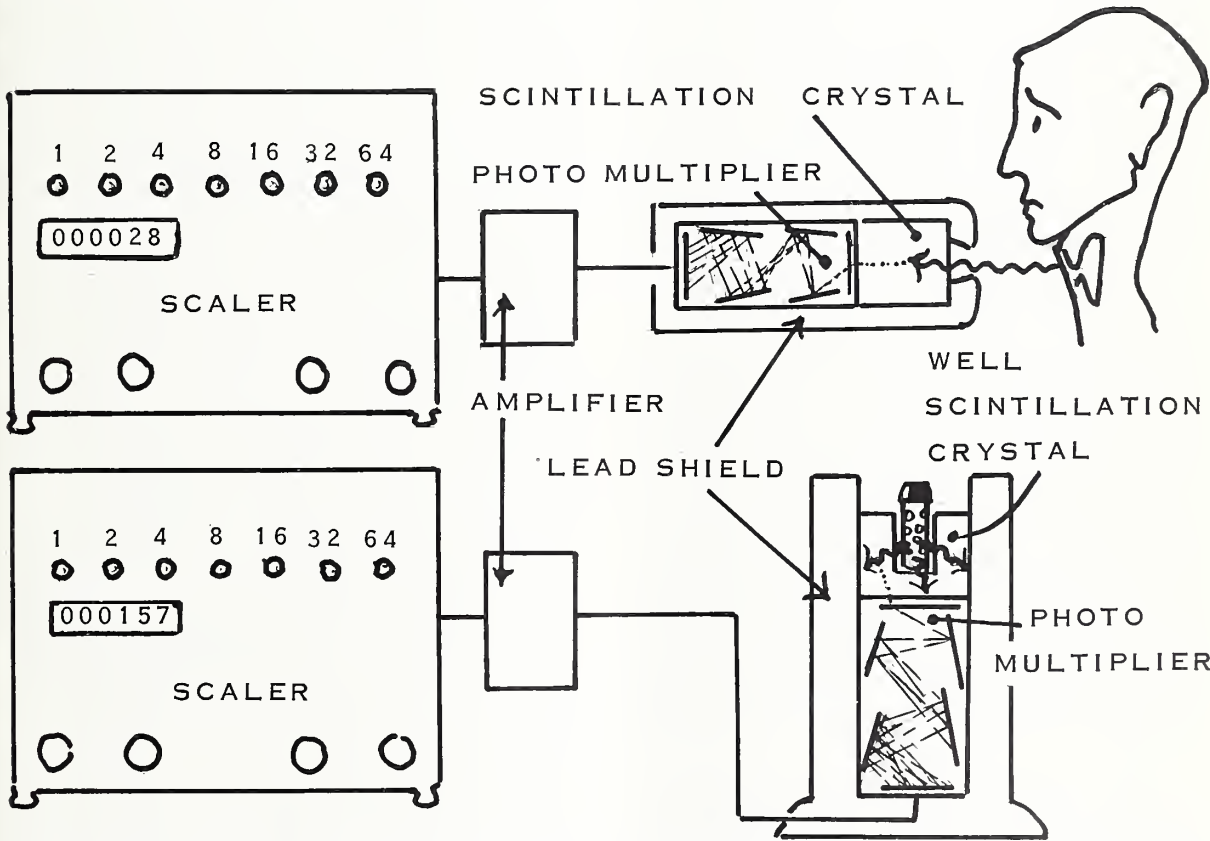


Figure 1. Basic equipment for clinical diagnosis with radioisotopes. A collimated crystal for external detection or measurement (above) scintillates when ionizing radiations strike it. The small flashes of light are multiplied and converted to electrical energy by the photomultiplier. After amplification of the signal, the counts are recorded by the scaler. A "well" scintillation crystal (lower) is used in a similar way for small liquid samples such as blood or urine.

ments would be in use in the coming years as routine medical equipment, or that many modern prospectors would be purchasing uranium-detecting versions of them from Sears, Roebuck & Co. for their weekend outings? The G-M tube is, in fact, a simple device consisting of a thin wire stretched axially in a gas-filled metal tube that has a thin coating of a poor conductor. High voltage tension is applied to the tube, and when ions are produced by the radioactive particles, a buildup occurs on the wire until a discharge point is reached. This produces a flow of current that can be quantitated on a wire electrometer or other recording device.

As a clinical tool, the G-M tube has had its day, and scintillation counting has partially replaced it. Considerably greater sensitivity is possible by the new method. Thus, lower doses of radioactivity, only a fraction of the amount formerly needed, can be given. Somewhat in contrast to the principle of the G-M tube, the scintillating material counts radioactive particles by emitting minute flashes of light. The era of scintillation counting began properly during 1947 in Germany, at the Kaiser Wilhelm Institute for Physical Chemistry in Berlin, the same place where fission of uranium was first recognized 11 years earlier. The basis for scintillation counting had been in existence for many decades. Rutherford, in his early research, had used fluorescent and phosphorescent screens for studying alpha particles, and emissions of light or fluorescence has for years been a commonly-used phenomenon, employed for example in the fluoroscope. The availability of a scintillator, however, that could efficiently detect minute amounts of radiation remained unknown until Hartmut Kallman, working in the unpleasant environment of bombed-out postwar Berlin, published his findings on a number of fluorescent materials in 1947.¹³ What was the basis for his success? He succeeded because he added a piece of electronic equipment, the photomultiplier tube, which had been developed for an entirely different purpose years earlier. I shall come back to the photomultiplier later in this paper.

Kallman's next immediate goal was to find the optimum sort of scintillating material. It was apparent to him that some materials yielded a good physical light-emitting response, but because of their lack of translucency, the effective light yield was poor.¹⁴ Naphthalene and anthracene crystals provided a fairly good light yield, and for several years they were tested and employed in counting systems.

The key discovery in scintillation counting came in 1948 at Princeton University. Robert Hofstadter, now a professor of physics at Stanford University, made the discovery that has to a significant degree changed the instrumentation of tracer isotopes.¹⁰ He had in his possession a crystal of

potassium iodide with a small thallium impurity which had been provided him a year earlier by Mr. Quinlan, of the General Electric Company. The purpose to which he originally had planned to put the material is unknown to me and is not recorded in his publications. Some success with potassium iodide stimulated him to try sodium iodide crystals, also with a small amount of thallium impurity. The results were very encouraging.¹¹ Large pulses could be detected from gamma rays when placed close to a multiplier tube, after the fashion of Kallman. Subsequently, he demonstrated excellent spectral responses of the various gamma energies in radioactive decay schemes.¹²

As a result, today most clinical measurements, both external and in body fluids, are performed with sodium iodide crystals containing thallium. In external measurements, various cones or collimators of lead permit accurate quantitation and rather precise localization of the radioactivity. Small samples of blood or other body fluids can be measured within a well crystal. This latter arrangement permits the placing of the vial sample in a well so that radiations are detected in all directions by the surrounding crystal, thereby allowing accurate measurement of extremely minute amounts of activity. Moreover, because of the excellent spectral response recognized by Hofstadter, energy peaks may now be isolated with pulse-height equipment so that it is possible to assay mixtures of isotopes simultaneously. However, none of the progress made in scintillation counting would be feasible if it were not for an accessory item, the photomultiplier tube.

The photomultiplier is a device for converting light energy into electrical energy. The principle is approximately 120 years old. Many light-sensitive materials are known. For example, the same principle is the basis for the photographer's light meter. But in the case of the light flashes from sodium iodide crystals, the amount is minute and cannot activate a photoelectric cell. Enhancing the photoelectric emissions was successful as early as 1910, and the development of commercial photo tubes has accompanied the development of radio receiving tubes.

A major contribution came in the mid and late 1930's, before the discovery of fission and before the widespread investigative uses of radioisotopes, when only pioneer experimentation in the medical uses of radioisotopes was as yet under way. Subsequently, the photo tube developed as the heart of the sound picture system, and was an integral part of facsimile picture reproduction by wire or wireless. It is a close relative of the electronic pickup tube in TV receivers.

The tube, in brief, consists of a series of dynodes or electrodes. Light striking the photocathode causes a release of electrons which move to the first dynode. In turn, each dynode receives electrons and then ejects greater numbers of electrons,

thus multiplying the original signal until measurable current is produced at the anode.

Many people participated in the development of the photomultiplier tube, and no single name stands out over the others. A major refinement in the design of the tube can be credited to Vladimir Zworykin and Jan Rajchman, research electronic engineers working in the RCA laboratory in Camden, New Jersey. Both men were immigrants to this country. Zworykin was born in Russia in 1889 and served in the Russian army in World War I as an officer in the Radio Corps. In the turmoil of the Russian revolution, he moved to Pittsburgh and began work for the Westinghouse Electric Company. Rajchman came to RCA in the mid-1930's from Switzerland. The essence of their device was the design of curved electrodes with an almost perfect focusing capacity, so that all of the electrons available were conserved.²¹ This arrangement allowed maximum amplification, and constituted a major advance over previous cumbersome magnetically-focused photomultipliers. Subsequent developments, since 1939, have been directed towards more uniform, stable, electronically foolproof and commercially practical tubes. Some photomultipliers now use a linear arrangement of "transparent" dynodes. These tubes have been applied to a variety of scientific problems and apparatus, scintillation counting being but one.

So much for the commonly used detecting equipment. Several means are available for recording quantitatively the counts that are collected by the detecting unit, either a G-M tube or a scintillator. The basic piece of equipment in most operations, however, is the scaler. As soon as the Geiger-Müller tube was put into use in 1929, physicists recognized an inadequacy in the recording of the signals from that sensitive instrument. Rate meters do not integrate or add up the number of counts in a unit of time (a function of the disintegrations), and mechanical registers similar to mileage recorders in an automobile are unable to collect all of the rapidly received counts, thus missing an appreciable number. Winn-Williams, a young scholar working in Lord Rutherford's Cavendish laboratory, was put on this problem, and in 1930 hit upon the use of thyratron tubes (grid-controlled arc tubes which can be regarded as valves behaving as inertia-less mechanical relays that can be "tripped" or "locked" by a practically negligible current of extremely short duration). Through proper grouping of such tubes in a circuit in connection with the mechanical counting meter, he could record events occurring in extremely rapid succession—at intervals as short as 1/250 of a second.²¹ As is frequently the case, the initial design was complicated and unstable, and in the next year a simpler and less erratic device using the same principle was worked out and proved suc-

cessful.²² But unsatisfactory, erratic equipment continued in use despite the improvements that had been made, until Higinbotham, at the Los Alamos scientific laboratory, published his circuit design in the mid-1940's. The latter has become the classical circuit employed in most scalers.

Finally, I should like to point to one of the many promising avenues of future development in the use of radioactive isotopes. It is merely a single example of the promise held for us. The equipment that I have described till now has been designed for the precise measurement of small localizations of isotopes in the body by external counting, and for the accurate measurement of small samples of body fluids. A growing need for an instrument capable of detecting radioactivity in human beings at levels well below maximally permissible concentrations has appeared with the increase in nuclear reactors and radiation sources. In addition to this health-protection need, the availability of such a device permits new ways of studying isotope-labelled materials in the body. In former years, such concern about the measurement of radon and radium was principally for the benefit of workers handling such materials or the victims of accidental exposure. As early as 1937, R. D. Evans was successful with a design using G-M counting tubes. A number of complicated systems have been proposed and tested in the last five years or so. I might mention the high pressure ionization chamber method of Burch,⁴ in England, and the sodium iodide crystal arrangement of Marinelli and his colleagues at the Argonne National Laboratory,¹⁸ in Illinois. The most elaborate of these installations that I know about is at the Los Alamos Scientific Laboratory.

Here, again, the prototype was built for a purpose unrelated to medicine. The Los Alamos group was anxious to devise an experiment to detect the free neutrino. The neutrino hypothesis had been valuable in explaining the observed facts of beta decay, but an experiment was needed to resolve doubts as to its existence. To this end, a large, well-like counter was built, using a tank that contained a scintillating liquid.⁵ The scintillations were detected and multiplied on a bank of photomultiplier tubes. Subsequently, several human beings and dogs were measured within the well, and it was thus proved that extremely sensitive and accurate measurements of whole-body radioactivity could be obtained.²⁰ After these preliminary observations, a human counter was built based on the same principle of the earlier neutrino counter.¹

The applications are numerous. It can be used for monitoring personnel who work with nuclear reactors, in the study of patterns of radioactive contamination of foodstuffs from fallout, in the study of patterns of body potassium content, in the retention of gamma-emitting fission products

and in natural body gamma activity. You will be more interested in the fact that it has enhanced and augmented technics that are now used with the equipment that I have described previously. For example, Lushbaugh¹⁷ has succeeded with this equipment in answering questions on the dynamics of chromium-51 as a red-cell label, has increased the value of the Rose Bengal liver-function test, and has aided our understanding of iron metabolism. The important implications of reliably determining the total amount of radioactivity in a human being and its pattern of metabolism are no doubt fully apparent to you.

SUMMARY

To summarize, I have outlined briefly the important areas of present-day applications of radioisotopes in the diagnosis of human disorders. The various essential items of equipment for properly measuring these isotopes have been described, and some information has been given about how the equipment came into being and for what purposes (Table 2).

TABLE 2.
KEY DISCOVERIES IN DETECTION AND MEASUREMENTS

	Year	Discoverers	Purpose
Geiger-Müller Tube	1928	Geiger-Müller	Basic physics instrument
Scaler	1931	Winn-Williams	To record G-M tube counts
Scintillation Crystal	1947	Kallman	Basic physics
	1948	Hofstadter	
Photomultiplier Tube	(1936?)	Many, e.g. Zworykin	Radio, facsimile reproduction, etc.
KEY DISCOVERIES IN PRODUCTION OF RADIOISOTOPES			
Cyclotron	1929-1930	Lawrence	Basic physics
Nuclear Reactor	1942	Fermi and many others	Weapon production

We owe debts to a variety of people. Often they were devoting their talents to problems quite unrelated to medicine.

The growing use of complicated pieces of equipment emphasizes the need for continuing close cooperation between medicine and the non-biological basic sciences so that maximum exploitation of these resources may continue to take place.

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OBSTETRICS AND GYNECOLOGY

A joint meeting of District VI of the American College of Obstetricians & Gynecologists and the state obstetrical societies of Iowa, Illinois, Minnesota, Nebraska, North Dakota, South Dakota and Wisconsin will be held on October 15-17 at the Sheraton-Fontanelle Hotel, in Omaha. The residents' meeting will take place on October 15 (Thursday). The AAGP will permit its members hour-for-hour credit, Category II, for attendance.

The scientific program will include the following papers: "The Ovary in Pregnancy," by Dr. Wallace W. Nelson, Grand Forks; "Fetal Salvage in Rh-Sensitized Women," by Dr. Clifford P. Gopelrud, Iowa City; "Use of Trilene in Obstetrics," by Dr. Samuel T. Thierstein, Lincoln; "Cirrhosis of the Liver in Pregnancy," by Dr. Richard M. Moore, Des Moines; "Urinary Stress Incontinence in the Female," by Dr. Burton R. Bancroft, Kearney; "Procedures to Combat the Incompetent Cervix—A Critical Evaluation," by Drs. F. Jackson Stoddard, Frederick J. Hofmeister and William P. Wendt, Milwaukee; and a paper on an as yet unannounced subject by Dr. W. Riley Kovar, of Omaha. Dr. Harry E. Harvey, of Lincoln, will be moderator and Drs. W. Joseph Martin and Leon S. McGoogan, Omaha, and William F. Mengert, Chicago, will be participants in a panel discussion of "Urological Complications in Gynecologic Surgery." There will also be roundtables on perinatal mortality, maternal mortality, endocrine problems, abnormal uterine bleeding, geriatric gynecology and obstetric analgesia.

Successful Therapy of Disseminated Histoplasmosis Through the Use of Amphotericin B

HUGH L. MOFFET, M.D., SAMIR NAJJAR, M.D., AND HENRY G. CRAMBLETT, M.D.

IOWA CITY

EARLY REPORTS of the fatal nature of untreated disseminated histoplasmosis in infancy were based on postmortem findings. Those reports indicated the difficulty of making the diagnosis antemortem. In 1945 a review was made of 21 fatal cases in children, 16 of which were in infants (less than two years of age).¹ The necropsy findings in such studies have provided a basis for establishing the diagnosis during life, and in consequence, therapy can now be attempted.

Amphotericin B, a new antifungal drug, has recently been used with encouraging results in the treatment of adults with this disease.²⁻⁴ Intravenous administration of amphotericin B to two infants with disseminated histoplasmosis has been reported,^{2, 3} but both patients died before the drug had been given for an adequate trial period.

This report describes two patients, four months and four years of age, respectively, who were treated for disseminated histoplasmosis by means of intravenous amphotericin B. The complications of therapy as well as the therapeutic regimens will be described.

CASE NO. 1

History. J. R. (SUI 58-4329), a four-month-old white female, was admitted to University Hospitals on August 7, 1958. The infant had been born at University Hospitals on March 30, 1958, and at birth had weighed 3.6 Kg. She was breast-fed, and gained weight normally during the first three months. The mother noted that the infant was pale during the month before admission.

One week before admission, the infant began to wake up at night to nurse, and her skin felt hot. Frequent coughing, followed by vomiting was observed. The infant was admitted to the local hospital, where daily fever as high as 40°C. continued for five days in spite of therapy with penicillin and oxytetracycline.

Physical Findings. At the time of admission to University Hospitals, the infant appeared pale but well nourished. The rectal temperature was 38.8°C. and the pulse 180/min. The weight was 5.6 Kg.

and the height 65 cm. A few petechiae were noted on the chest.

On auscultation, the lungs were clear. The abdomen appeared enlarged. The inferior edges of the spleen and liver were palpable 5 cm. below the costal margins in the midclavicular lines. No other abnormalities were noted. The infant was thought to have acute leukemia.

Laboratory Findings. The concentration of hemoglobin was 5.9 Gm./100 ml., the leukocyte count was 4,100/cu. mm., and the platelet count was 32,000/cu. mm. A specimen of bone marrow examined on the day of admission showed erythroid hyperplasia, few platelets, and reticuloendothelial cells and monocytes containing small, oval yeast-like cells. Cultures of peripheral blood and bone marrow taken on the day of admission yielded a fungus with the diagnostic tuberculate chlamdospores of *Histoplasma capsulatum*.

Treatment. The infant was given three transfusions of 100 ml. of whole blood and 10 ml. of gamma globulin by intramuscular injection during the first week of hospitalization. A total of 151 mg. of amphotericin B was given intravenously in 23 infusions over a period of 35 days (Figure 1). The initial dosage was 0.25 mg./Kg., and this was increased to 1.5 mg./Kg. by the sixth day of treatment, and thereafter was given on two of every three days. The dose was decreased in the last week of therapy. The amphotericin B was suspended in 200 ml. of a 5 per cent solution of glucose in water and infused into a scalp vein over a six- to eight-hour period.

Course. Six days after amphotericin B therapy was instituted, the smear of the bone marrow showed that the organisms had an altered morphology (Figure 2). The yeast-like cells were stained lightly and appeared distorted and partially disintegrated. At the same time, the temperature decreased from a daily maximum of over 39°C. to normal. Three subsequent cultures of bone marrow and one culture of urine yielded no growth. The temperature remained normal for the remainder of the hospitalization, except for three occasions immediately after infusion of amphotericin B (Figure 1).

This paper was submitted in part to the Iowa Pediatric Society's 1959 essay contest for residents, and was granted first prize in that competition.

On one occasion, 1.5 mg./Kg. was given in 200 ml. of 5 per cent glucose in water, intravenously, over a two-hour period. Immediately after this rapid infusion, the infant appeared restless, dyspneic and slightly cyanotic. The temperature was 39°C., and the pulse was 200/min. Gradual improvement was noted over the following three hours without any treatment.

Episodes of restlessness, stiffening of all four extremities, grunting respirations and cutis anserina occurred immediately after three of the infusions near the end of the treatment period.

Six urinalyses revealed no protein, reducing substance or microscopic abnormalities. The concentration of urea nitrogen in the blood was measured twice each week, and was always normal.

The thymol turbidity of the serum was elevated slightly at the time of admission and in the middle of the treatment period. The cephalin flocculation of the serum was abnormally increased in the middle of the treatment period, but returned to normal within a week. The concentration of cholesterol, albumin and globulin in the serum and the alkaline phosphatase activity remained within normal limits.

A roentgenogram of the chest was normal at the time of admission and when the patient was discharged from the hospital.

The C-reactive protein substance in the serum was 4+ at the time of admission, and gradually disappeared from the serum. The erythrocyte sed-

imentation rate (Westergren method) remained within normal limits.

The histoplasmin complement fixation test was positive in a dilution of 1:128 at the time of admission. Serial determinations showed a gradual decrease to a titer of 1:16 three months later.

At the time of admission, the intradermal histoplasmin test was negative.

Throughout the entire illness, the infant was breast fed without supplementary feeding. The weight increased to 6.1 Kg. at the time of discharge on September 19, 1958, even though the baby frequently vomited the first feeding after an infusion.

The platelet count and the concentration of hemoglobin gradually returned to normal.

The infant was given supplementary vitamins and iron after discharge, and was reexamined at monthly intervals. Six months after discharge, her weight was 7.4 Kg. The inferior edges of the liver and spleen were not palpable. The concentration of hemoglobin was 12.7 Gm./100 ml. A culture of the bone marrow taken two months after discharge yielded no growth.

Epidemiologic Findings. The infant lived on a farm that is located in a region where histoplasmosis is prevalent. In that county, 80 per cent of school children tested had positive intradermal histoplasmin test results.⁵

The family had moved to the farm from Wisconsin four years previously. All family members

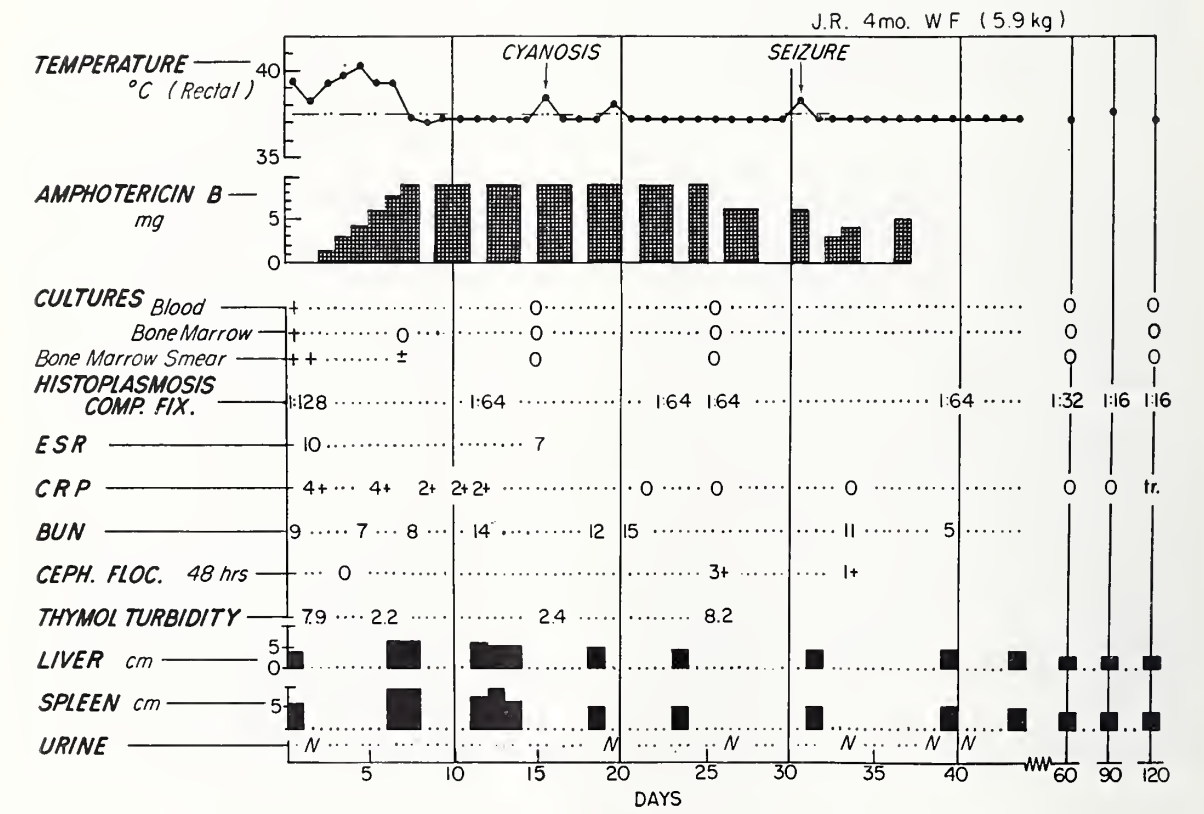


Figure 1. Course of four-month-old infant with disseminated histoplasmosis (Case No. 1).

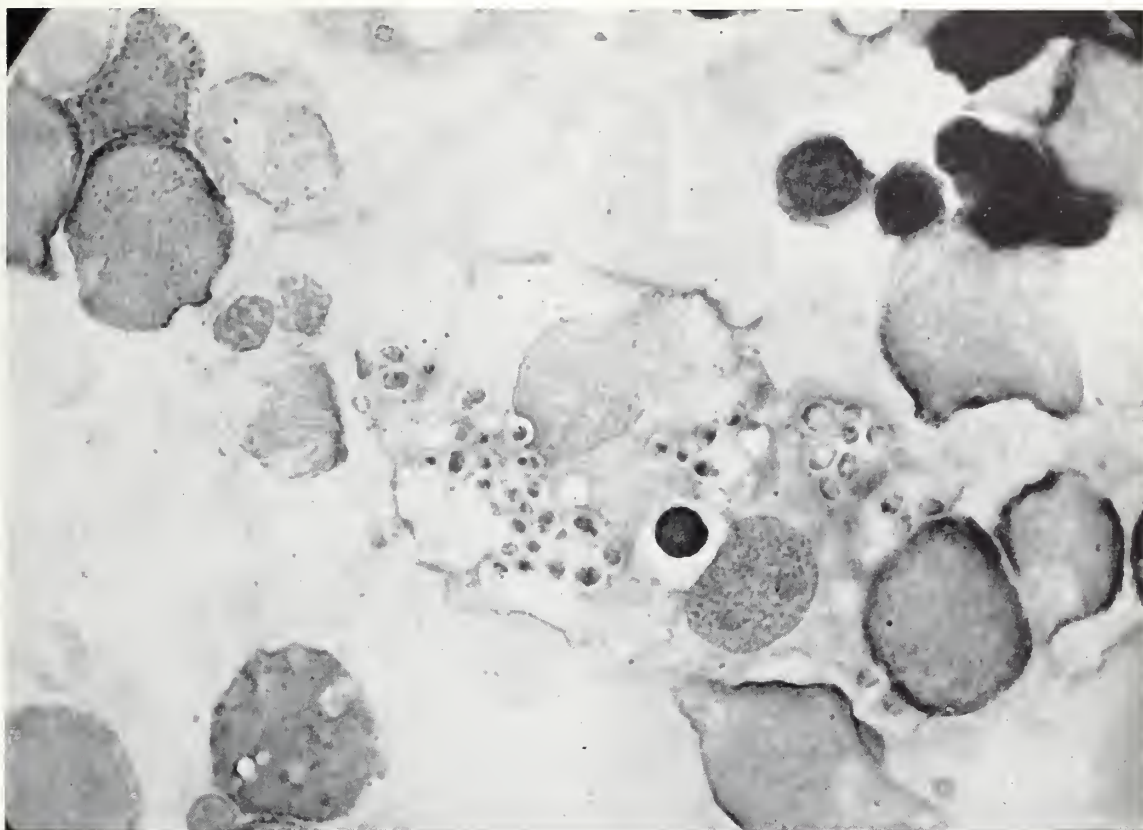


Figure 2A. Photomicrograph of bone marrow showing numerous *Histoplasma capsulatum*.

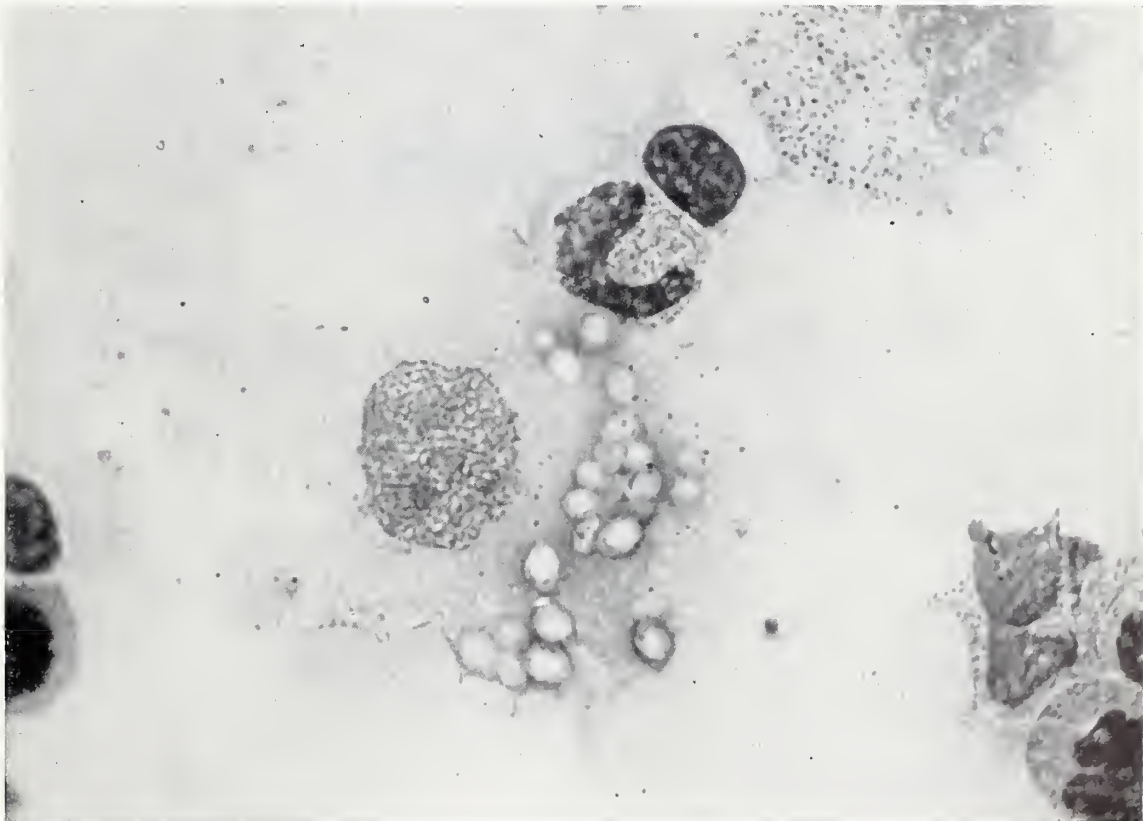


Figure 2B. Photomicrograph of bone marrow showing degenerating forms of *Histoplasma capsulatum* after therapy was started.

had positive reactions to intradermal histoplasmin tests (Table 1). Roentgenograms of the chest revealed findings consistent with previous pulmonary histoplasmosis in five of the six siblings. Four of the six children had histoplasmin complement fixation titers of 1:4 or greater.

In 1951, a five-month-old female who lived on the same farm had been admitted to University Hospitals with similar clinical findings, and died 25 days later. At necropsy, *Histoplasma capsulatum* was found in the lungs, liver, spleen, adrenals, kidneys, lymph nodes and bone marrow. The diagnosis had been made 17 days before death on the basis of cultures of peripheral blood and bone marrow, and the infant had been treated with blood transfusions, penicillin and quinacrine. Intradermal histoplasmin tests of all four of the household members were then positive, and two of those three had positive serologic tests for histoplasmosis.⁶ *Histoplasma capsulatum* was cultured from the soil of this farm in 1951.⁷

These epidemiologic findings are consistent with results of previous studies which indicated that histoplasmosis is found in isolated, highly infective areas where if any member of a household has a positive reaction to a skin test, it is probable that all of them will.⁵ In the family reported here, where the exposure of each individual to the organism was probably similar, the newborn developed disseminated disease, the other children exhibited roentgenographic changes in the lungs with positive complement fixation reactions, and the adults had no manifestation of the disease other than positive intradermal test results.

CASE NO. 2

M. D. (SUI 58-15147), a four-year-old white female, was admitted to University Hospitals on No-

vember 7, 1958. The patient had been in good health until approximately three months previously, when her parents noted that she had increasing anorexia, irritability and pallor. Three weeks before admission, she was found to have a fever, and was seen to be listless and apathetic. She was examined by a physician who found her to have anemia, hepatosplenomegaly and fever. Because there was no response to a regimen of antibiotics, the patient was referred to University Hospitals for diagnosis and treatment.

Physical Findings. The temperature was 40°C., rectally, the pulse was 140/min., and the respirations were 32/min. The child appeared both chronically and acutely ill. The skin and mucous membranes were pale. There were scattered small, discrete lymph nodes, but no distinct lymphadenopathy. The inferior edge of the liver was palpated 6.5 cm. below the right costal margin in the midclavicular line, and the spleen was palpable 6 cm. below the left costal margin in the midclavicular line.

Laboratory Findings. The concentration of hemoglobin was 8.4 Gm/100 ml. The leukocyte count was 4,000/cu. mm., with a differential of 58 per cent polymorphonuclear cells and 42 per cent lymphocytes. The erythrocyte sedimentation rate (Westergren method) was 26 mm./hr. The hematocrit was 27 per cent. The platelet count was 50,000/cu. mm. The reticulocyte count was 3.6 per cent. The C-reactive protein was 4+. The cephalin flocculation was 3+ in 48 hours. The concentration of urea nitrogen in the blood and the urinalysis were normal. Roentgenograms of the chest did not reveal any pneumonic infiltrates. An aspiration of bone marrow was examined, and numerous *Histoplasma capsulatum* were found

Table 1
FAMILY STUDIES

	Age	Intradermal Histoplasmin Test	Complement Fixation Titer*	Chest Roentgenogram
Father	35	+	0	Normal
Mother	33	+	0	Normal
Brother	13	(+)	4	Normal
Brother	12	(+)	4	Hilar enlargement and calcification
Sister	9	+	4	Hilar enlargement and calcification
Brother	6	(+)	0	Hilar calcification
Sister	4	+	32	Hilar calcification, focal emphysema
Sister	2	+	0	Peripheral and hilar calcification
Patient	4/12	-	128	Normal

(+) = Test read by mother or father as at least equal to their own strongly positive skin tests.

* = Reciprocal of the dilution.

within histiocytic cells. The cultures of the blood and bone marrow all subsequently grew the same organism. The histoplasmin complement fixation test was positive in a titer of 1:64.

Course and Therapy. The patient was started on gradually increasing doses of amphotericin B, administered intravenously (Figure 3). A regimen consisting of 382 mg. of amphotericin B was given during a period of 42 days by means of 32 intravenous infusions. Although the ghost forms of *Histoplasma capsulatum* could be found in the smears and aspirations of bone marrow as long as 26 days after the onset of therapy, the bone marrow culture was negative by the fifteenth day of therapy. The blood culture was negative on the seventh day of therapy. The patient responded quite well to the therapy, and there was gradual improvement clinically. There were several episodes when the concentration of urea nitrogen in the blood became elevated, but this determination became normal when the amphotericin B was discontinued for one day, or when the dosage was decreased. The patient was discharged on December 22, 1958. She has been examined at regular intervals since discharge, and has remained well.

DISCUSSION

Although there are reports of infants and young children who have survived disseminated histoplasmosis without specific therapy,⁸⁻¹³ most infants have succumbed to the illness. Many drugs have been used in the therapy of this disease. To date no single agent has been shown to possess reproducible beneficial effect.

Sulfonamides are not effective against *Histoplasma capsulatum in vitro*.¹⁴ Three infants have survived disseminated histoplasmosis while receiving sulfonamide therapy, but the response to therapy was not prompt,¹³ and other infants so treated have not survived.⁸

Antibiotics are probably contraindicated, for like adrenal cortical steroids, they enhance the growth of the fungus *in vitro*.^{12, 16} However, one infant survived after receiving only penicillin.⁸

Arsenicals, antimony compounds and quinacrine inhibit the growth of *Histoplasma capsulatum in vitro*, but adequate concentrations in body tissues are not safely attainable.^{14, 16} Nystatin is also effective *in vitro*, but is not absorbed when given by mouth and is toxic when administered intravenously.² Ethyl vanillate has been used with variable results.^{15, 17}

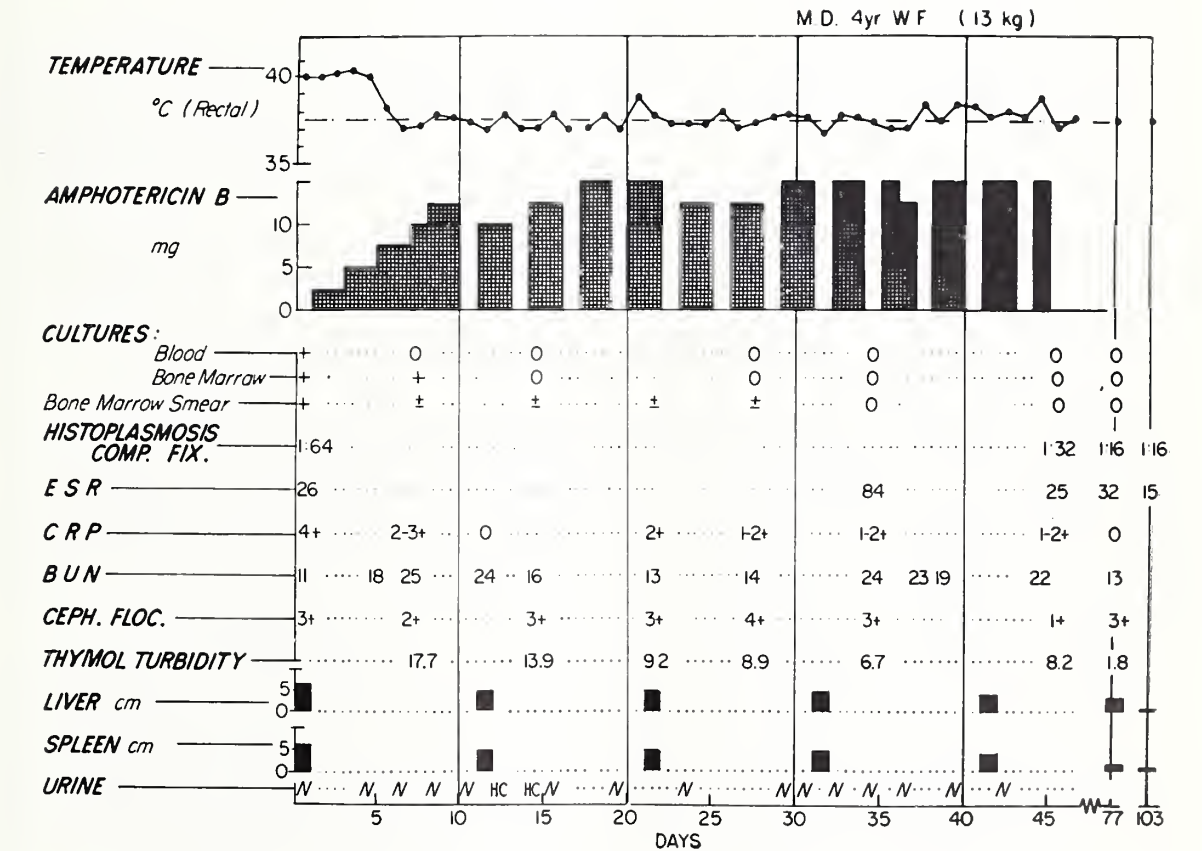


Figure 3. Course of a four-year-old child with disseminated histoplasmosis (Case No. 2).

Amphotericin B is an anti-fungal agent derived from a species of soil *streptomyces*.¹⁸ The compound is poorly absorbed from the gastrointestinal tract, and oral therapy with the drug is inadequate.^{2, 3, 19} The preparation for intravenous use is a powder with added bile salts. When mixed with a 5 per cent solution of glucose in water, it forms a colloidal suspension which is stable for 24 hours.²⁰ The drug is excreted slowly by the kidney, and thus may be administered every other day when used in high doses.²

In vitro studies of the drug indicate that it is the most effective of 18 anti-fungal agents tested against a wide range of fungi.²¹ Against *Histoplasma capsulatum*, *Blastomyces dermatitis*, *Sporotrichum shencki*, *Cryptococcus neoformans* and *Candida albicans*, it is inhibitory in concentrations readily obtainable in human beings.²¹

Little is known about the development of resistance to amphotericin B by *Histoplasma capsulatum*. However, resistance to amphotericin B can be induced in some strains of *Candida*, although not in *Candida albicans*.²²

The possibility of such induced resistance to *Histoplasma capsulatum* make short courses of therapy in low dosage undesirable in disseminated histoplasmosis.

In toxicity studies, four monkeys tolerated 2 mg./Kg. five days each week for three to four weeks with temporary elevation of the concentration of urea nitrogen in the blood, vomiting after infusion, and phlebitis.²⁰ These effects, together with the appearance of hyaline casts in the urine, increased erythrocyte sedimentation rate, and fever after infusion have been observed in man.^{2, 3, 19, 23}

In the patients reported here, Case No. 1 received amphotericin B in the maximum recommended dose of 1.5 mg./Kg. during a period of six to eight hours. Case No. 2 was given a maximum of 1.2 mg./Kg. during a similar period. There was no evidence of renal toxicity in Case No. 1, but in Case No. 2 transient elevations of blood urea nitrogen were observed. The latter determinations became normal when the dosage of amphotericin B was decreased or when the drug was discontinued for one day. Occasional mild episodes of fever occurred in relation to therapy. Phlebitis at the site of infusion was not observed.

The episode of dyspnea, tachycardia and cyanosis which occurred in the first of these patients after a rapid infusion of amphotericin B may have been related to the increase in blood volume or to a direct effect of the drug. The episodes of stiffening of the extremities were believed to have been seizures, and may represent a cerebral effect of the drug that had not been described previously. One of these stiffening episodes was noted in association with fever, and may have been a reaction to pyrogens in the infusion.

The elevation of the thymol turbidity and cephalin flocculation noted during the course of the treatment indicates that amphotericin B may temporarily alter some tests of hepatic function.

The effectiveness of therapy with amphotericin B in adults with severe or disseminated histoplasmosis has been demonstrated.²⁻⁴ However, two infants treated with intravenous amphotericin B have died. According to one report, a six-month-old infant received the drug orally until a short period before death, when intravenous infusions were started.³ In another report, a five-month-old infant was described as moribund when therapy was begun, and received the drug for only three days before death.² Neither of these infants received the drug by the intravenous route until late in the disease, and the period of treatment was too brief for the effect of therapy to be determined.

In the cases reported here, the temperature returned to normal, and there was clinical improvement within six days after intravenous therapy was started. The altered morphology of the *Histoplasma capsulatum* noted on the smear of the bone marrow was interpreted as indicating a specific effect of the drug. Apparently, it caused the death and fragmentation of the organism. The subsequent negative cultures appear to confirm this interpretation.

The C-reactive protein in the serum was a very useful laboratory guide to activity of the disease. The disappearance of this substance from the serum, the rise in platelet count and the increased concentration of hemoglobin provide additional laboratory support for the belief that amphotericin B was effective in changing the course of the disease.

Further controlled observations are needed before it can be concluded that the intravenous administration of amphotericin B is a safe and effective treatment for systemic mycoses in infants and children.

SUMMARY

A four-month-old infant and a four-year-old child with disseminated histoplasmosis were successfully treated with amphotericin B administered intravenously. The method of administration, dosage and present knowledge of the toxic effects of the drug have been discussed.

ACKNOWLEDGEMENTS

Dr. F. J. Swift, of Maquoketa, Iowa, referred Case No. 1 and cooperated in the study of the patient's family. Dr. David Weaver, of Davenport, Iowa, referred Case No. 2. Dr. John Cazin, Jr., and Miss Marion Jones isolated the organisms and performed the complement fixation tests. Mrs. Imogene Jenson identified the organisms on the smears of bone marrow.

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Postgraduate Conferences

S.U.I. College of Medicine, Iowa City

CONFERENCE ON ALCOHOLISM

The following is the program of the Joint Meeting of the Iowa Neuropsychiatric Society and the Nebraska Society of Neurology and Psychiatry that is to be held in Iowa City on Saturday, October 17.

- 9:00 a.m. Registration
 9:45 Introductory Remarks—Paul E. Huston, M.D.
 10:00 Survey of Alcoholics in Iowa—Harold A. Mulford, Ph.D.
 11:00 Physiology and Metabolism of Alcohol in Alcoholism—Harold E. Himwich, M.D., former member of the Committee for Problems of Alcoholism, National Research Council, and director of the research division at Galesburg State Research Hospital, Galesburg, Illinois
 1:15 p.m. Alcoholic Syndromes—John Clancy, M.D.
 2:00 Recent Advances in the Treatment of Alcoholic Syndromes—Harold W. Lovell, M.D., associate professor of clinical neurology at New York Medical College
 3:00 The Alcoholic's Viewpoint—a member of Alcoholics Anonymous
 3:45 Individual Business Meetings of the Societies
 6:30 Dinner (Members' wives welcome)
 9:30 Panel Discussion on Motivating the Alcoholic—Richard H. Lee, M.D., Dubuque; Leo B. Sedlacek, M.D., Cedar Rapids; and Albert C. Voth, Ph.D., director of the psy-

chology service at the Clarinda Mental Health Institute

- 10:45 Alcoholic Clinic Operation and Research—Benjamin Kissin, M.D., director, State University Clinic on Alcoholism, Brooklyn, New York

CONFERENCE ON RADIOLOGY

Friday, October 30

- 1:15 p.m. Registration
 2:00 The End Results of Treatment of Carcinoma of the Cervix—Howard B. Latourette, M.D.
 2:30 Stress Fractures—John Leabhart, M.D.
 3:00 Discussion
 3:30 The Dissemination of Cancer—G. O. McDonald, M.D., associate professor of surgery, University of Illinois College of Medicine
 4:30 A Pseudoabnormality of the Lumbosacral Junction—John T. Keller, M.D.
 4:45 Business Meeting, Iowa Radiological Society
 6:30 Social Hour and Dinner, Mayflower Cafe (Wives will be welcome)

Saturday, October 31

- 9:00 a.m. Indirect Placentography—Frank Behlke, M.D.
 9:30 Joint Changes in Swine Erysipelas—Paul T. Meyers, M.D., Bloomfield
 10:15 Interesting Problem Films (Registrants are requested to bring films for discussion)

Myocarditis and Adrenal Failure in Influenza

Report of a Fatal Case

THEODORE ROWAN, M.D., AND F. C. COLEMAN, M.D.

DES MOINES

MOST OF THE fatal cases of influenza that occurred during the 1958 epidemic and most of the sporadic cases that occurred in 1959 were observed in elderly or debilitated people. Early in 1959, however, we performed an autopsy on a 28-year-old white woman who had died suddenly at home. The autopsy findings were sufficiently unusual to justify this report, for the sudden death had apparently been due to influenza complicated by myocarditis and adrenal failure.

CLINICAL HISTORY

Chief Complaint: Diarrhea, vomiting and dyspnea.

Final Illness: The patient had called her family physician on March 2, 1959, complaining of diarrhea, vomiting and dizziness that had begun on the previous evening. Up until the onset of this illness, she had had no symptoms and had been in excellent health. Her family physician made a tentative diagnosis of influenza. Because of nervousness and the dizziness previously mentioned, he prescribed Thorazine tablets, 25 mg. size. She took the first tablet at approximately 1:30 p.m. A few minutes later her husband telephoned her from his place of employment to ask how she was feeling. She told him that she was nauseated and dizzy, and that the diarrhea was continuing. The husband noted nothing unusual in her speech, but when he came home from work at approximately 5:45 p.m., he found her dead on the floor of the living room. Vomitus was present on the floor near the body, and an undissolved Thorazine tablet was present in this vomitus. The other Thorazine tablets were still in the bottle.

The husband called the family physician, and when he arrived about 10 minutes later, he found her lying on the floor on her right side with her body flexed. The coroner was called, and a post-mortem examination was requested. Unfortunately, the body had been arterially embalmed before the pathologist was told that his services would be required.

Past History: The patient had had an episode of nervousness in 1952, and in March, 1958, she again had complained of nervousness and of pain in the chest. At that time, a diagnosis of mild depression had been made. In January, 1959, she had had an attack of acute tonsillitis with persistent vomiting which responded satisfactorily to antibiotics and antiemetic therapy.

Family History: The patient had appeared to lead a happy, well-adjusted home life.

GROSS AUTOPSY FINDINGS

General Body Description: The body was that of an embalmed, well-developed, well-nourished white female, appearing approximately the stated age of 27 years. The body measured 62 in., and weighed approximately 130 lbs. Brownish pigmentation was noted over the face, neck and arms, suggestive of the residual of a sun tan.

Heart: Numerous petechiae were noted on the posterior aspect of the left and right ventricles, and to a lesser extent on the anterior surfaces of both ventricles. The heart weighed 250 Gm. Mild arteriosclerotic changes were noted in the proximal 2 cm. of the right coronary artery. No abnormalities were noted otherwise, except for a small accessory coronary artery arising beside the ostium of the right coronary artery. This accessory right coronary artery was distributed locally in the pulmonary conus.

Lungs: The right lung weighed 365 Gm., and the left lung weighed 320 Gm. The mucosa of the larynx was of a pale brown color. The larynx contained a small amount of mucoid, greenish material resembling that noted in the ileum. This mucoid, greenish material was clinging to the vocal cords. Frothy fluid was observed in the major bronchi of the left lung, and to a lesser extent in the major bronchi of the right lung. The cut surface of each lung, especially in the lower lobes, was pinkish red, and small amounts of edema fluid were present.

Adrenal Glands: The adrenal glands were of normal shape, but they appeared slightly smaller than usual, with each adrenal gland weighing approximately 6 Gm.

Brain: The brain weighed 1,335 Gm. Multiple petechiae were noted, especially on the cut surface. No other abnormalities of the brain were present.

Other Viscera: No significant lesions were observed in the liver, pancreas, kidneys, urinary bladder or internal genitals.

MICROSCOPIC EXAMINATION

Heart: The epicardium had a prominent endothelial lining. Mild, focal epicardial fibrosis was noted, with minimal edema. There were focal extravasations of red blood cells into the epicardium.

The myocardial fibers were normal in appearance, and the blood vessels were of normal appearance except for moderate congestion. Distributed through the myocardium, however, were multiple foci of chronic inflammatory cells resembling lymphocytes, and a scattering of polymorphonuclear leukocytes and plasma cells (Figure 1). These lymphocytes had dark-staining nuclei and a small amount of pale-blue cytoplasm. These collections varied from small foci of a few cells to diffuse areas that could be seen grossly on the stained slide. The collections of inflammatory cells were distributed throughout the myocardium, including both the auricles and the ventricles. These were most numerous, however, in the auricles just above the atrio-ventricular septum. The next most frequent site was the ventricular myocardium just below the atrio-ventricular ring. These chronic inflammatory cells extended from the epicardium down to and including the endocardium. In some areas, they were densely packed (Figure 2). Small numbers of fibroblasts and histocytes were observed in these areas, and in the places where the cells were most numerous, focal necrosis was observed in the myocardial fibers. A marked decrease in the cross striations of the muscle fibers was

noted around these areas of necrosis. Other than the chronic inflammation and the areas of necrosis, the myocardium showed no changes. No lesions of the valves were observed. The sections of coronary artery revealed minimal arteriosclerosis.

Trachea and Bronchi: The tracheal mucosa and submucosa contained moderate numbers of chronic inflammatory cells which were predominantly lymphocytes. Sections of the bronchi showed a much heavier chronic inflammatory cell infiltrate. The smaller bronchi showed greater numbers of inflammatory cells than did the larger bronchi.

Lungs: A minimal amount of proteinaceous exudate was observed on the pleural surface of each lung, and this exudate contained small numbers of red cells. Mild pulmonary edema was present. There was marked congestion of the pulmonary vessels, with extravasation of small numbers of red cells into most of the alveoli. Interstitial inflammation was observed with the same type of inflammatory cells as were observed in the trachea and bronchi.

Adrenal Glands: The periadrenal fat showed a mild degree of focal fat atrophy. The capsule of each adrenal gland was normal in appearance.

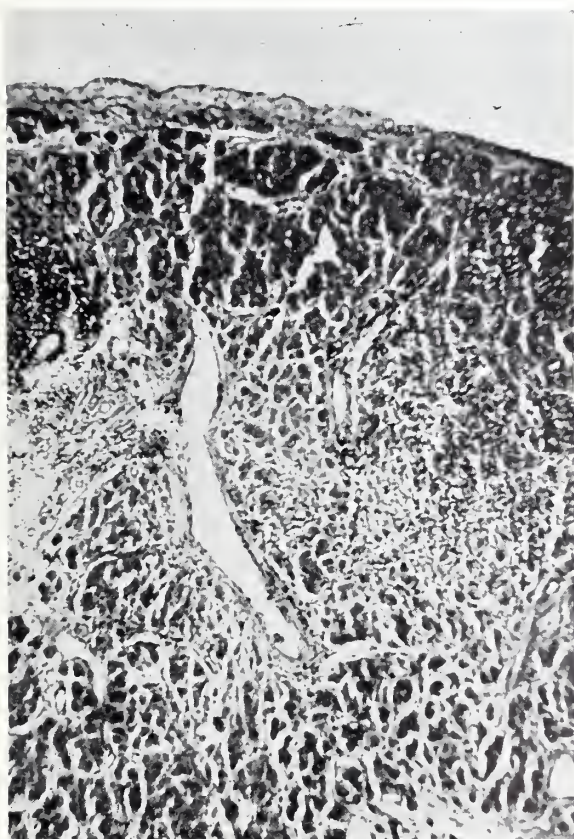


Figure 1. Subendocardium, base of right ventricle, x35. Right side of field shows diffuse infiltration with lymphocytes; upper left shows a more dense aggregation.

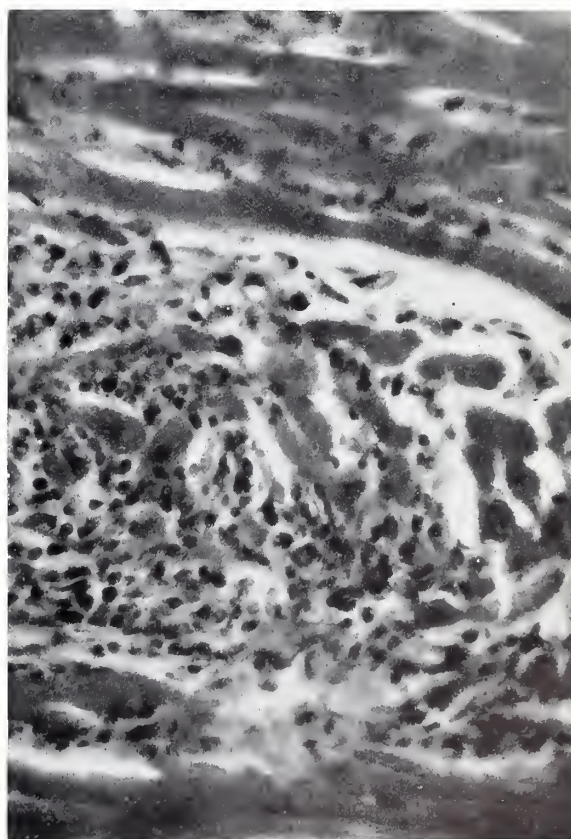


Figure 2. Myocardium, x430, showing variation in pattern of lymphocytic infiltration. Perivascular distribution not predominant.

There was reduction, however, in the thickness of the cortex of each adrenal gland, and there was scanty medullary tissue. The blood vessels and lymphatics were markedly dilated. The normal architectural pattern was distorted enough to give the sections of the adrenal glands the appearance of multiple pseudo-tubular spaces throughout the cortex (Figure 3). The adrenal cortical cells making up these pseudo-tubular spaces were atrophic. The atrophy observed in the cortical cells was variable (Figure 4). In some areas, the zona glomerulosa and zona reticularis were markedly affected, and the zona fasciculata only slightly affected. In other areas, the reverse situation was present. Where there was acute atrophy, the stroma between the cortical cells consisted mostly of fibroblasts and endothelial cells of capillaries, with small numbers of plasma cells and histiocytes present. Distributed throughout the adrenal cortex in all zones, however, were collections of lymphocytes arranged in cord-like formation about the tubular spaces (Figure 5). These varied from only a few lymphocytes to large areas that were almost macroscopic in size. They were most numerous in the superficial portion of the cortex. Focal collections of lymphocytes were also noted in the medulla, which was also reduced in size. The lipid

content of the adrenal cortical cells was markedly reduced.

Sections of Other Organs: Sections of other viscera revealed no significant lesions.

The significant findings at autopsy were myocarditis and adrenal cortical inflammation, with adrenal "exhaustion" and pulmonary interstitial inflammation and edema.

The pulmonary findings were consistent with influenza. The aspirated vomitus noted on the vocal cords was regarded as a terminal and incidental event.

DISCUSSION

A minor epidemic of influenza was present in Des Moines at the time of this woman's death, and the clinical history would tend to confirm the family doctor's diagnosis of influenza. It is very unfortunate that the body had been embalmed prior to the autopsy so that virology studies were precluded.

Coxsackie virus, type C, is a known cause of myocarditis, although it is an uncommon cause. The myocarditis in such cases may be associated with encephalitis, especially in the newborn.^{1, 2, 3} It has also been recorded in adults.

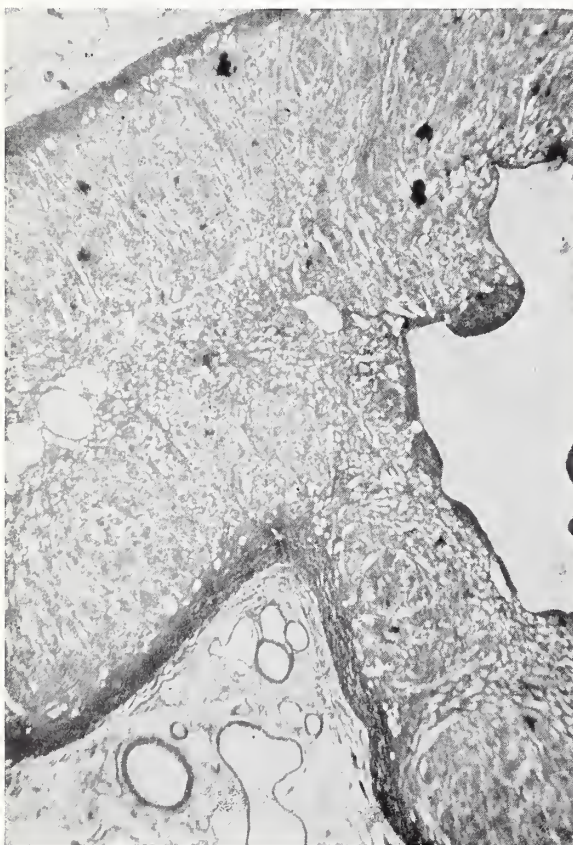


Figure 3. Adrenal gland x35 Generalized "tubular degeneration."

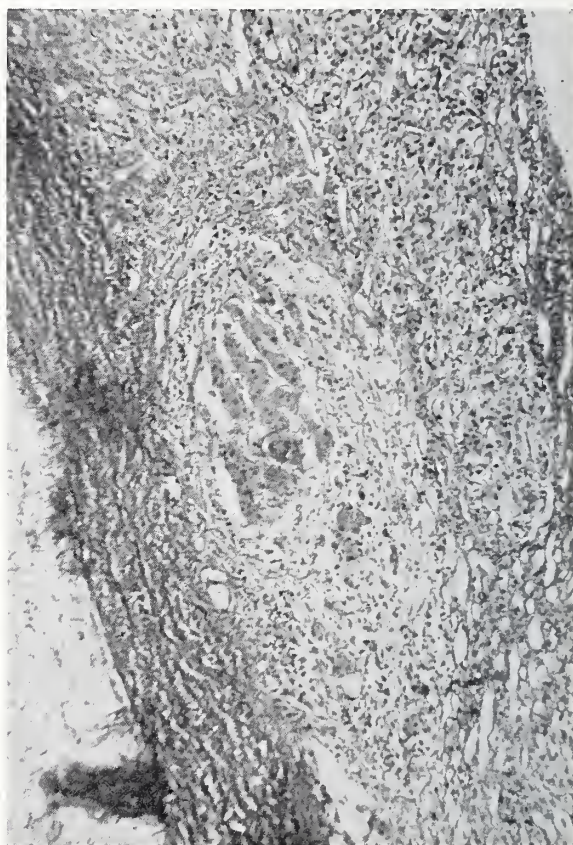


Figure 4. Adrenal cortex x100. Generalized "tubular degeneration" of varying severity, showing loss of cortical cells and lipid content, and scattered lymphocytic infiltration.

A recent report⁴ cites three cases of myocarditis in a group of 111 patients with Asian influenza, variant type A. All of these patients recovered, and there was no way to confirm the clinical diagnosis of myocarditis. Electrocardiographic changes were recorded in this and in other studies.⁵ Cardiac abnormalities are considered relatively frequent in influenza, however, and these manifest themselves as cardiac irregularities, cardiac dilatation or the appearance of murmurs.

Another recent report of 21 cases of myocarditis⁶ states that six of them were associated with a significant rise in antibody titre for influenza viruses A and B. This would suggest that myocarditis may be a relatively frequent and possibly a severe complication of influenza, and acute myocarditis is a recognized cause of sudden death.

In some fatal cases that have been reported, the autopsy findings have been somewhat different from those observed in this patient of ours. In a report of two cases of myocarditis from which influenza virus type A were isolated, one case had adrenal hemorrhage.⁷ Meningococcal infection was assumed to be present and to account for this adrenal hemorrhage, but no meningococci were demonstrated.

Another report of 33 fatal cases of Asian influenza⁸ showed that myocarditis was present in 13 cases, but it was described as having been "toxic" in type. The microscopic description of the myocarditis in some of these cases closely resembled the findings in this case. Three of the deaths occurred in young, previously healthy adults who were stricken and who died within an hour following their admission to the hospital. Many of the cases in this series showed "shock-like" changes in the adrenal glands—the pseudotubular alteration and lipid depletion. The changes in the adrenal glands, however, were not so marked as those which were observed in our case.

Rich⁹ has pointed out the association of tubular degeneration of the adrenal glands in patients dying of acute infections. He concluded that it was the probable cause of death. He believed that it had not been caused by circulatory collapse, nor had these changes necessarily produced circulatory failure.

The tubular changes present in the adrenal glands in this case are thought to be of similar etiology, with the spaces forming because of the loss of adrenal cortical cells. In these areas, the tubular spaces are bounded by capillaries. Much of the fibrous tissue surrounding the capillaries is obscured by lymphocytes.

The lymphocyte is one of the sites of antibody production.¹⁰ The presence of numerous lymphocytes in the foci of inflammation and the appearance of the adrenal glands remind us that the lymphocyte is one of the products of adrenal cortical steroid action. Thus, adrenal cortical

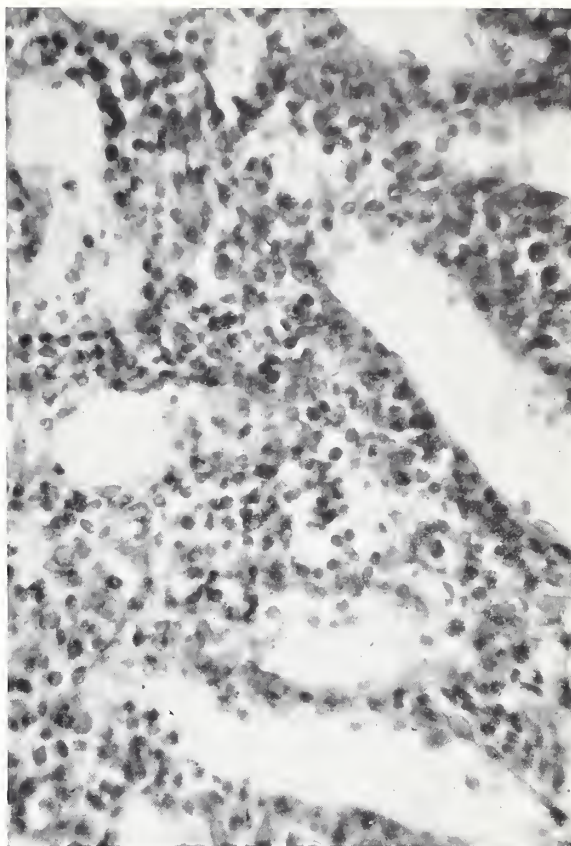


Figure 5. Adrenal cortex $\times 430$. Marked loss of cortical cells, leaving the capillary endothelium as the only lining of many "tubules." Remaining cortical cells show anisokaryosis and karyolysis, and loss of lipid content. Prominent lymphocytic infiltration.

steroids integrate the lymphocyte and the adrenal cortex in resistance. A decrease in resistance to toxins and to spontaneous infections is attributed to adrenal cortical insufficiency.¹¹

Influenzal studies in Iowa carried out by the USPHS and by Dr. Albert McKee at the S.U.I. College of Medicine¹² have shown that the two recent local outbreaks have been due primarily to influenza virus type B. This finding is in keeping with reports from elsewhere in the United States, except for an occasional case of Asian influenza.

It is of particular interest to note that our patient was found dead on the floor—death apparently having occurred while she was trying to get to the bathroom. Two other influenza patients whom we know of have recently fainted while trying to get to the bathroom. One suffered a subluxation of the cervical vertebra in the fall, and the other sustained multiple abrasions and bruises.

The possibility that fainting can be a complication of influenza should therefore be kept in mind, and patients with influenza should be warned to lie down on the floor immediately if they feel faint while on their way to or from the bathroom.

Otherwise, they should remain in bed. Consideration should be given to the advisability of keeping patients at strict bed rest if there are clinical indications of myocardial or adrenal involvements complicating the influenza.

CONCLUSION

It is our belief that this patient developed myocardial and adrenal failure as a complication of acute influenza. In response to this acute infection, lymphocytes were poured out, and they localized primarily in the myocardium and the adrenal glands. The severity of the infection quickly led to adrenal exhaustion before adequate antibody production could take place.

SUMMARY

1. A case of sudden death in a 27-year-old white female has been reported, with death being due to acute myocarditis and adrenal failure secondary to acute influenza.
2. Acute myocarditis and adrenal insufficiency are complications of acute influenza more commonly than we realize.
3. Patients with acute influenza should be kept

at bed rest. They should be cautioned about the likelihood of their fainting if they do get out of bed.

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Single-Day Meeting at Council Bluffs

On Thursday, October 15, the Pottawattamie County Medical Society, in cooperation with the Iowa State Medical Society, will hold a postgraduate medical education course at the Chieftain Hotel, in Council Bluffs. A \$5 fee will be charged each person who attends either or both the afternoon program and the social hour and dinner. The program is as follows:

- 1:25 p.m. Welcome—J. G. Kruml, M.D., president, Pottawattamie County Medical Society
- 1:30 "Treatment of Common Lacerations and Facial Injuries"—Thaddeus J. Litzow, M.D., consultant in the Section of Plastic Surgery, Mayo Clinic. He will present a detailed discussion of the treatment of lacerations seen in everyday practice.
- 2:30 "Poisonings and Bites"—Everett A. Nitzke, M.D., Des Moines, director of the Poison Information Center, Blank Memorial Hospital. Dr. Nitzke will present the procedures indicated in common types of injuries of these sorts.
- 3:45 "Back and Neck Injuries"—George E. Perret, M.D., professor of surgery at S.U.I. His presentation will include a discussion of whiplash injuries of the cervical spine.

A QUESTION AND ANSWER PERIOD will follow this last one of the lectures.

- 5:15 SOCIAL HOUR
6:30 BUFFET DINNER

OTHER COUNTY MEETINGS IN OCTOBER

At the meeting of the Woodbury County Medical Society that is to be held at the Sheraton-Martin Hotel, in Sioux City, at 6:30 p.m. on October 22, Dr. Louis T. Palumbo, chief of surgery at the Veterans Administration Hospital in Des Moines, will speak on the topic "Current Trends in Sympathectomy."

On October 13, at the Dubuque Golf and Country Club, Dr. Geza de Takats, clinical professor of surgery at the University of Illinois, Chicago, will address the Dubuque County Medical Society on "Evaluation of the Arteriosclerotic Limb." Dinner will be served at 6:15 p.m., and the program will start at 7:15.

The Tenth
COUNTY MEDICAL SOCIETIES' CIVIL
DEFENSE CONFERENCE
Morrison Hotel, Chicago
November 7-8

State University of Iowa College of Medicine

Clinical Pathologic Conference

SUMMARY OF CLINICAL FINDINGS

A 26-YEAR-OLD white woman was admitted to University Hospitals in a semi-coma.

The patient had been pregnant three times previously. Her first pregnancy had culminated in a normal delivery. The next two pregnancies had resulted in stillbirths. She was a known Rh-negative, and her husband was a homozygous Rh-positive. Her health had otherwise been good.

The present pregnancy had been carried without complications until the sixth month, when her doctor recognized that the fetus had died. Her Rh titre was 1:32 (anti-C plus D albumin agglutinins). She had had no edema or proteinuria, and her blood pressure had never been above 140/80 mm. Hg. Her weight gain had been eight pounds. Subsequently, "fibrindex" determinations were performed weekly. Normal values were obtained until two days before admission to this hospital, when the patient's blood failed to clot.

Initially, she had been hospitalized in her home community and given 5 Gm. of fibrinogen intravenously. While the fibrinogen was running in rapidly, her blood pressure rose to 190/120 mm. Hg., and she developed a severe headache. Her doctor believed that she "seemed to become more seriously ill after the fibrinogen was given." Her blood pressure subsequently returned to its usual level of 140/80 mm. Hg. She began to vomit coffee-ground material which gave a positive test for blood. Edema of the face developed during the next few hours. The patient received 75 mg. of Demerol five hours prior to her admission to University Hospitals.

On the evening of her admission, she had remained semi-stuporous, and had moved her extremities only after stimulation. She was moderately obese, and also had edema of the face and hands. She was coughing or vomiting small amounts of bloody material. Funduscopic examination revealed papilledema, engorged retinal veins and hemorrhages. The neck was slightly stiff. The blood pressure was 150/100 mm. Hg., and the pulse was 50 beats per minute. The uterus was enlarged to just beneath the umbilicus. The deep tendon reflexes were hyperactive, with a tendency to clonus. Weakness on the left side of the body was noted. The Babinski response was equivocal.

Laboratory studies that night included the following. A whole-blood clotting time was 7-8 minutes. No fibrinolysin was detected. The plasma fibrinogen was estimated at 70 mg. per cent. The urine contained 4+ protein and many red blood cells.

While under observation over the next few hours, the patient's pulse remained between 44 and 52. She had several mild clonic seizures. She was given one unit of fresh whole blood and 3 Gm. of fibrinogen intravenously. During the hysterotomy that was performed that same night, no evidence of a bleeding tendency was noted. The size of the dead fetus indicated a gestation period of about six months. A "true knot" was found in the umbilical cord. Postoperatively, the patient remained semi-comatose, and developed increased neck rigidity and bilateral subconjunctival hemorrhages.

Detailed blood coagulation studies were performed some 12 hours after the patient's admission to the hospital. The whole-blood clotting time was 2 min. and 26 sec. Clot retraction was normal. The one-stage prothrombin was 93 per cent, the two-stage prothrombin 70 per cent, and the accelerator activity 99 per cent. Fibrinogen was 100 mg. per cent, and no fibrinolysin was detected. The thromboplastin generation test was normal, but prothrombin utilization was abnormal, with 70 per cent at 30 minutes and 20 per cent at 60 minutes. The platelet count was 63,000 per cubic millimeter, the white blood cell count was 17,300 per cubic millimeter, and the blood hemoglobin was 13.1 Gm. per cent.

On the second hospital day, the blood hemoglobin had fallen to 6.9 Gm./100 cc., despite two additional units of blood. The platelet count was 94,000 per cubic millimeter. The blood urea nitrogen was 23 mg. per cent. The vital signs were: blood pressure 150/80 mm. Hg., pulse 75, respiratory rate 25, and rectal temperature 101°F. The urinary output was 25 ml. per hour. The right pupil was smaller than the left.

Thirty-seven hours after her admission to the hospital, the patient's breathing suddenly slowed and became irregular. The blood pressure increased to 200/120 mm. Hg., and the pulse was bigeminal. Both pupils dilated, and a few minutes later the respirations ceased.

SUMMARY OF CLINICAL DISCUSSION

Dr. William C. Keettel, Obstetrics and Gynecology: I shall present this case in a chronologic manner, emphasizing the problems that confronted this woman's physician from the beginning of this pregnancy. The patient was 26 years old, gravida 4, para 3. Her first pregnancy ended in a normal full-term, uncomplicated delivery. In the second pregnancy, the fetus died during the thirty-ninth week. There is no information about whether

fetal hydrops was present. During that pregnancy, the woman was found to be Rh-negative and her husband was found to be Rh-positive homozygous. It is unusual for the second pregnancy to result in a severely sensitized child unless there has been a history of transfusion or intramuscular blood given to the mother in infancy. There was no such history in this instance. A third pregnancy had also resulted in a stillborn infant at term, presumably from severe Rh sensitization.

In the present pregnancy, the last menstrual period had been on January 27, making the expected date of confinement November 4, 1958. With the patient's previous obstetric history and with the knowledge that she was Rh negative and her husband Rh positive, the physician expected at the time of her first visit that the fetus would be severely sensitized. It was problematical whether the pregnancy could be carried to term. With our present knowledge, there is no therapy for the prevention of intra-uterine sensitization. Many things have been tried, but none has proved effective.

Therapeutic abortion is rarely recommended for severe Rh sensitization, since the natural history is unpredictable. Even with a history of severe involvement and a homozygous father, occasionally children are born at term with minor sensitization. Sterilization, however, is often recommended following delivery, if fetal salvage has been poor.

Thus, during this pregnancy there was no specific therapy other than routine prenatal care, with frequent examinations. During the first trimester of the patient's pregnancy, she had no complications. It should be remembered that intra-uterine sensitization usually doesn't occur until the twenty-third week of pregnancy. Periodic titers were drawn on this patient, and at 16 weeks the titer was 1:32. Subsequent titers showed only slight variation. Antigenic titers have little prognostic value in particular cases, with the exception that a very high titer may indicate severe involvement. Severe sensitization may be indicated by other obstetrical findings, such as excessive weight gain, hypertension, albuminuria and hydramnios. This patient didn't manifest any of these changes prior to the fetal death.

During the twenty-second week, the patient notified her physician that she had not felt fetal movement for the past three or four days. The question now arises as to how a physician can determine whether intra-uterine death has occurred. At the twenty-second week this can be a difficult problem, since fetal movement has been felt for only a short time. The absence of the fetal heart sounds at this stage of pregnancy isn't always diagnostic. Another sign of fetal death is failure of uterine enlargement, but the determination can be made only after at least three or four weeks of observation. Another very useful method of determining fetal death is fetal electrocardiography.

This is very reliable and can be used as early as the sixteenth week of pregnancy. At the present time, the test is not available in this hospital, but the requisite equipment has been ordered.

The hormonal tests depending upon the presence of chorionic gonadotrophins are not of immediate value in the detection of fetal death. Often, the complete disappearance of the chorionic gonadotrophins requires from two to four weeks. The presence or absence of pregnanediol seems to be a more sensitive test, and in certain instances it may be of considerable help. Radiographic techniques are of great value in determining the presence of fetal death. Dr. Gillies will present the radiologic interpretation of such changes. In this particular case, fetal death was substantiated by the absence of fetal movement and fetal heart beat, and by the gradual regression in the size of the uterus.

Dr. Carl L. Gillies, Radiology: In this particular case, I think there are two radiographic factors to be considered. First, in advanced erythroblastosis fetalis we are sometimes able to make the diagnosis *in utero*. The extreme edema of the fetus causes a straightening of the normal curve of the back and forces an extension of the arms and legs. This has been described as the "Buddha sign," and is a position opposite to the compact one that is characteristic of the normal fetus. Also, in advanced erythroblastosis fetalis the placenta is greatly enlarged, occupying nearly half of the uterine cavity and crowding the fetus to the other side.

Secondly, since advanced erythroblastosis fetalis is a cause of fetal death, we have the radiographic signs that are usual in that situation.

As Dr. Keettel has told you, the films that I shall show you are not of the patient in question, but are two examples of the radiographic findings in fetal death. The first film demonstrates a dead fetus *in utero*. You will note gas within the fetal heart, a sign that we aren't able to detect in all cases, but one which may occur within 24 hours after the fetal death. With death *in utero*, the fetus macerates, and there is an overlapping of skull bones such as is also shown here. Overlapping of skull bones is pathognomonic of fetal death if the mother is not in labor. It takes a week or so after fetal death for this sign to develop. Of course, if the patient is in labor with the head presenting, the skull bones of a normal live fetus will show overlapping.

Angulation of the spine is also a late sign of fetal death.

The second film is that of a stillborn fetus taken immediately after birth. It shows gas within the heart and the iliac vessels. You will note that the child has never breathed, there being no air within the lungs or gastrointestinal tract. The skull bones also show overlapping.

One group of observers has analyzed the gas

from the heart and vessels occurring in intra-uterine fetal death and found it to be nitrogen.

Much has been said recently about Devel's "halo sign" as an indication of fetal death. Normally, there is subcutaneous fat beneath the scalp that may be visualized radiographically as a line of decreased density. In fetal death, this is separated from the skull, producing the "halo sign."

Dr. Keettel: The physician next was confronted with the problem of managing a fetal death *in utero* at the twenty-second week of pregnancy. In the majority of instances, spontaneous onset of labor will occur within three weeks following fetal death. However, in a small group of patients, the dead fetus is carried a much longer time. What are the harmful effects of permitting a mother to carry a dead fetus for a long period in the hope that spontaneous delivery will eventually occur? One unpleasant effect is the emotional disturbance that the patient suffers, and the physician must exercise considerable skill and tact when she learns that she is harboring a dead baby. A second complication which may develop is abnormal adherence of the placenta with poor myometrial contractions, resulting in serious bleeding at the time of expulsion. The third problem—and the most serious—is hypofibrinogenemia. This will occur in approximately 25 per cent of patients if the fetus dies when the pregnancy has advanced beyond the twentieth week, and if it is retained longer than five or six weeks thereafter. The term "dead fetus syndrome" has been used to designate this complication.

When the fetus is retained for several weeks, what methods are available for stimulating expulsion? Near term, the problem of inaugurating labor is not so difficult as it is at 22 weeks, because the uterus is more susceptible to oxytocic agents. The following procedures are available: (1) intravenous pitocin; (2) large amounts of oral estrogen to prime the uterus so that it is more susceptible to the oxytocic agents; (3) rupture of the membranes; (4) dilatation and curettage; and (5) abdominal hysterotomy.

In this particular case, induction of labor, rupture of membranes, and dilatation and curettage were not suitable. It was decided to observe the patient and hope that spontaneous evacuation of the uterus would occur. In addition, the fibrinogen levels were checked weekly. With a fall in the levels, the pregnancy would be terminated by operative means. This seemed a logical and sound approach, since the hypofibrinogenemia associated with the dead fetus syndrome usually develops rather slowly. This is different from the sudden hypofibrinogenemia which develops from other obstetrical causes such as separation of the placenta and amniotic fluid emboli.

The patient was followed weekly and had normal fibrinogen levels until the last week. At that time, a poor clot formed, and it was found that the

fibrinogen level had decreased. Dr. Carter will discuss the accuracy of the clot-observation test and the other laboratory procedures that are available for the determination of hypofibrinogenemia.

At this time, the patient was feeling well and had no complaints, even though she had serious hypofibrinogenemia. Some patients may bleed from other areas such as the urinary tract or the gastrointestinal system, or may show cutaneous evidence of a bleeding tendency.

When the low fibrinogen levels were found, the patient was promptly hospitalized and treated. Initially, 5 Gm. of fibrinogen was given intravenously, but despite this amount, a stable clot didn't form. During the administration of fibrinogen therapy, hypertension, albuminuria and headache developed, and the patient became acutely ill. These complications have not been reported as a sequela of fibrinogen therapy, and were no doubt unrelated. The possibility that serious preeclampsia produced these symptoms must be considered, but since the patient was normotensive and the fetus had been dead for at least five or six weeks, this seems unlikely. The blood pressure returned to normal several hours following this episode, but the clinical appearance of the patient didn't improve and she became semi-comatose. A stable clot didn't form, so it was decided to transfer the patient to another hospital for management.

When the patient arrived at this hospital, the salient features of her examination were as follows. The patient was semi-comatose, with marked edema of hands and face; she was coughing up a small amount of bloody sputum. The blood pressure was 150/100 mm. Hg., and the pulse rate was 50. The fundus was just below the umbilicus, and was soft. The cervix was closed and not effaced, and there was no vaginal bleeding. Neurological examination revealed a stiff neck, absence of knee jerk on the left, a positive Babinski on the left, and eye grounds showing evidence of retinal hemorrhage. There were occasional petechiae over the body. Laboratory findings included a hemoglobin of 13 Gm., a hematocrit of 38 per cent and platelets 63,000. The venous blood didn't clot, and the fibrinogen was estimated at 70 mg. per 100 ml. of plasma. At that time, the provisional diagnosis was hypofibrinogenemia due to the retention of a dead fetus, and it was felt that the patient had cerebral hemorrhage because of a low fibrinogen level.

The patient was managed in the following manner. Two grams of fibrinogen and 500 ml. of fresh whole blood were given intravenously. As soon as a stable clot formed, an abdominal hysterotomy was performed. Bleeding was minimal during the operative procedure, and the surgery was uneventful. Following the operation, the patient did poorly, the respiratory difficulties increased and the coma deepened. Death occurred 37 hours after the patient's admission to the hospital. During the

postoperative bleeding, there was no excessive vaginal or wound bleeding. It was felt that the patient died from the effects of the cerebral hemorrhage.

Dr. John R. Carter, Pathology: First, I should like to ask Dr. Keettel whether the patient had excessive vaginal bleeding following the operation.

Dr. Keettel: There was no overt bleeding.

Dr. Carter: The principal finding at autopsy was a rather large intracerebral hemorrhage located in the antero-inferior portion of the left occipital lobe and extending into the posterior portion of the parietal lobe. The involved area was 4.5 cm. in diameter. The blood clot in the center of the lesion was estimated to be approximately a day and a half or two days old. On it was superimposed more recent hemorrhage which had, in turn, communicated with the subarachnoid space. The brain tissue about the area of hemorrhage was rather macerated, and showed the presence of increased numbers of oligocytes and microglial cells, findings which support the supposition that there had been two episodes of bleeding.

There were focal areas of congestion in the lungs, early but very definite acute tubular necrosis of the kidneys, and the usual changes that one finds in pregnancy. These latter included a decidual reaction of the ovaries, chromophobic hyperplasia of the pituitary gland and breast, and uterine changes. All of these were within physiologic limits.

It is important at this point to emphasize that in none of the sections could we find any evidence of intravascular thrombosis. In most cases of this type, however, thrombi commonly are found in the viscera. A possible explanation for the absence of thrombi will be presented later.

The placental site showed a good blood clot, and there was clotted blood on the pelvic floor. The surgical incision exhibited clotted blood also.

As Dr. Keettel has mentioned, the case in point is referred to as the retained fetus syndrome or dead fetus syndrome, and the term *afibrinogenemia* is commonly used in association with this process. It should be emphasized, however, that the latter term is a misnomer, since there is almost never a complete absence of fibrinogen in such cases. The term *hypofibrinogenemia* is much more accurate. *Afibrinogenemia* is applicable in some cases of the congenital variety in which individuals have been born literally without any fibrinogen. Parenthetically, I might mention that most of the few congenital afibrinogenemics who have been studied meticulously haven't had bleeding episodes, except after trauma.

Hypofibrinogenemia can occur in the disease process under consideration today; it can occur in shock and shock-like states, in burns and in transfusion reactions; it can occur as a complication of pulmonary surgery; and it can occur in

certain cases of carcinoma of the prostate where potent fibrinolysins can sometimes be detected.

The mechanism in this particular case, and in others similar to it, is generally considered to be the result of intravascular clotting due to the release of thromboplastic substances. In this particular patient, it was presumably a very slow release of thromboplastic substances from the macerated fetus. In *abruptio placenta*, the process is much more rapid, and the changes—clottingwise and clinically—are accordingly somewhat different from a quantitative standpoint. Occasionally, in cases like the one under discussion today, a fibrinolysin can be detected. We tested for fibrinolysin and for profibrinolysin on two different occasions, and found neither on either occasion. Fibrinolysins, however, can come and go very rapidly. We do know that the fibrinogen level was low. It was 62 mg./100 ml. when the patient came to the hospital, and at no time did it exceed 100 mg./100 ml. Thus, in this case, we feel that in all probability there was intravascular clotting to account for the low fibrinogen levels, and that there was at some time a rather potent fibrinolysin which could have accounted for the absence of recognizable thrombi in the sections. It is of interest that blood from the heart did not clot after two hours.

In the photograph of the blood clot in the brain, the so-called lines of Zahn are quite apparent. These laminations of leukocytes separated by bands of platelets and red cells provide us a basis for estimating the age of the blood clot. Superimposed on this older clot, however, were the more recent areas of hemorrhage which extended into the macerated brain tissue. The blood in the subarachnoid space, likewise, was quite fresh, there being no lamination or organization.

These pathologic findings were consistent with the clinical picture in that the patient appeared to have had two separate episodes of bleeding, as evidenced particularly by changes in her neurologic status. The placental site exhibited strands of fibrin with red cells enmeshed in them, indicating that at least at the time of the operation, fibrin was being formed in seemingly adequate amounts. In some cases, either because of the presence of fibrinolysins or because of the very low fibrinogen levels, the placental site will not exhibit fibrin threads, or at least the amount of fibrin will be greatly reduced. In this case, the 100 mg./100 ml. of fibrinogen that the patient had at the time of the operation apparently was sufficient to produce an essentially normal fibrin deposition at the placental site.

The photograph of the kidney showed beginning tubular degeneration of the epithelium. The tubules contained precipitated protein material and sloughed epithelial debris. Bowman's spaces were virtually packed with proteinaceous material, and the overall histologic appearance, as well as the gross appearance, was entirely consistent with

acute tubular necrosis, or what has been referred to in the past as "lower nephron nephrosis."

This lesion was probably the result of vasospasm. No thrombi could be found in any of the vasculature. It has been demonstrated experimentally that injection of thromboplastic substances into rabbits can elicit severe vasospasm of the arterioles and of the interlobular arteries. This is not a consistent observation, but when it does occur, the so-called lesser circulation of the kidney becomes of prime importance and the Trueta shunt mechanism apparently becomes operative, resulting in acute tubular necrosis.

In the so-called dead fetus syndrome, in addition to the low fibrinogen, there are often other clotting abnormalities. Generally, but not always, there is a decrease in prothrombin and in accelerator factors. Less commonly, there may be a decrease in certain of the so-called plasma thromboplastin factors. These changes are considered secondary phenomena, probably based on adsorption of these factors on the fibrin clots that are formed intravascularly, and they can almost never be incriminated as the cause of bleeding. Not infrequently, platelets are greatly reduced, and at times this reduction apparently accounts for the actual bleeding. In the majority of instances, however, the platelet count will vary between 50,000 and 80,000. In this case, the platelet count of 64,000 could well have accounted for the prolonged prothrombin consumption that was detected, the latter being the result of a deficiency in platelet factor III, which is essential for plasma thromboplastin formation, which in turn is essential for the conversion of prothrombin to thrombin.

At the present time, there are numerous methods for the rapid determination of fibrinogen, and they are quite adequate for following patients who have the dead fetus syndrome. The principal concept back of the host of modifications is the time that it takes for thrombin to clot a known quantity of plasma. In addition to the parameter of timing, with a little experience one can add a known quantity of thrombin to plasma, roll out the clot, and examine it grossly. For example, in the present case, on one occasion it was estimated from the gross appearance of the clot that there was approximately 70 mg. of fibrinogen present. Kjeldahl determinations thereupon indicated 62 mg./100 ml. of fibrinogen. Kjeldahl determinations are time-consuming, of course, but they are highly accurate.

Thus, in summary, the cause of death can well have been the intracerebral hemorrhage that resulted, in all probability, from hypofibrinogenemia secondary to the retention of the dead fetus.

NECROPSY DIAGNOSES

1. Intracerebral hemorrhage, left occipital lobe
2. Status post cesarean section

3. Defective blood coagulation mechanism secondary to intra-uterine retention of dead fetus

4. Acute tubular degeneration, kidneys

5. Congestion of lungs and spleen.

Dr. Elmer L. DeGowin, *Internal Medicine*: I should like to ask Dr. Keettel to tell us the overall efficacy of treating patients with injections of fibrinogen. How many people can thus be saved?

Dr. Keettel: Hypofibrinogenemia may result from a number of obstetrical complications. These include the dead fetus syndrome, premature separation of the placenta, amniotic fluid emboli, severe postpartum hemorrhage with multiple blood transfusions, and infected abortions. The mortality from hypofibrinogenemia in obstetric patients from all causes is 12 per cent. These are recent statistics, and they include patients receiving fibrinogen therapy. Presumably many more patients would have died had fibrinogen not been given. As regards the morbidity from fibrinogen therapy, I can say that in a collective study the incidence of serum hepatitis was 5 per cent and there were several deaths from the liver complications.

It is our feeling that though fibrinogen therapy may be lifesaving in many hypofibrinogenemic patients, it is very important to use fibrinogen only on strict indication, and not simply because the patient is bleeding vaginally from other obstetrical causes. It should also be remembered that fibrinogen levels return to normal very rapidly after the delivery of the fetus. Dr. Pritchard has followed a number of patients with severe *abruptio placenta* complicated by hypofibrinogenemia in whom fibrinogen was not used but in whom vaginal delivery was effected as soon as possible. In one individual with severe *abruptio*, the fibrinogen level prior to delivery was 25 mg. per cent, but no fibrinogen was given. The membranes were ruptured, and delivery occurred within several hours. The patient did receive 500 ml. of whole blood, which is the equivalent of 0.3 Gm. of fibrinogen. The fibrinogen levels were followed serially after delivery. Within four hours, the level was 50 mg./100 ml. of plasma; in eight hours it was 100 mg.; and in 24 hours the fibrinogen level was back to 175 mg., which was within normal range for the laboratory at which the determinations were done. Following delivery, the patient didn't bleed excessively from the uterine cavity.

This example shows that a patient will not bleed excessively from a well-contracted uterus, even though the fibrinogen levels are dangerously low. However, if this patient had been operated upon under the same circumstances, she would have bled to death as a result of bleeding from the abdominal incision and from the incised uterus, which isn't capable of contracting as well as the intact uterus.

Coming Meetings

In State

- Oct. 15 Postgraduate Medical Education Meeting (Pottawattamie County Medical Society and ISMS). Chieftain Hotel, Council Bluffs
- Oct. 17-18 Iowa-Nebraska Neuropsychiatric Conference. S.U.I., Iowa City
- Oct. 30-31 Radiology. SUI College of Medicine, Iowa City
- Nov. 19-21 Biennial Midwest Cardiac Conference (Iowa Heart Association, SUI College of Medicine, State Department of Health and Iowa Clinical Medical Society). Iowa City

Out of State

- Oct. 1 Third Annual Symposium on Diabetes Mellitus (Chicago Diabetes Association). Thorne Hall, Northwestern University, Chicago
- Oct. 1 School Health Symposia. University of Kansas School of Medicine, Kansas City
- Oct. 1-3 Nebraska Heart Association's Scientific Conference. Blackstone Hotel, Omaha
- Oct. 1-4 Joint Convention, New Hampshire Medical Society & Vermont Medical Society. Equinox House, Manchester, Vermont
- Oct. 2 Fall Meeting, Massachusetts Society of Anesthesiologists. New England Medical Center, Boston
- Oct. 2-3 Tri-State Medical Assembly. Confederate Memorial Medical Center, Shreveport
- Oct. 2-3 American Medical Writers' Association. Chase Hotel, St. Louis
- Oct. 2-3 Eighteenth Annual Meeting, Western Industrial Medical Association, combined with Third Western Industrial Health Conference. Statler Hotel, Los Angeles
- Oct. 2-4 Annual Meeting, California Society of Internal Medicine. Miramar Hotel, Santa Barbara
- Oct. 3-8 American Academy of Pediatrics. Palmer House, Chicago
- Oct. 4-5 Medical Society of Virginia. Hotel Roanoke, Roanoke
- Oct. 4-6 Southern Psychiatric Association. Sheraton-Dallas Hotel, Dallas
- Oct. 5-6 San Diego County Heart Association, Ninth Annual Symposium on Heart Disease. El Cortez Hotel, San Diego
- Oct. 5-7 Obstetrics for General Physicians. University of Minnesota, Minneapolis
- Oct. 5-7 Internal Medicine (American College of Physicians, University of Buffalo School of Medicine). Buffalo General Hospital, Buffalo
- Oct. 5-7 Association of Medical Illustrators. Seattle
- Oct. 5-8 American Academy of Pediatrics. The Palmer House, Chicago
- Oct. 5-9 American Society of Anesthesiologists, Inc. Americana Hotel, Bal Harbour, Florida
- Oct. 5-9 Fourteenth Annual Course, Clinical Cardiorespiratory Physiology. Edgewater Beach Hotel, Chicago
- Oct. 5-9 Third Annual Postgraduate Week, New York Academy of Medicine, "Research Contributions to Clinical Practice." New York City
- Oct. 5-9 Electrocardiography. Cook County Graduate School of Medicine, Chicago
- Oct. 5-9 New York Academy of Medicine. New York City
- Oct. 5-16 Board of Surgery Review Course, Part I. Cook County Graduate School of Medicine, Chicago
- Oct. 5-16 Electrocardiography. Cook County Graduate School of Medicine, Chicago
- Oct. 6-9 Indiana State Medical Association. Murat Temple, Indianapolis
- Oct. 7-8 Twenty-ninth Annual Professional Symposium, Los Angeles County Heart Association. Beverly-Hilton Hotel, Beverly Hills
- Oct. 7-9 Fracture Course (Greater Niagara Medical Society and the Surgical Section of the Ontario Medical Association). Niagara Falls, Ontario
- Oct. 7-9 Congress of the Association of French Speaking Physicians. Lausanne, Switzerland
- Oct. 7-9 Fracture Course (Greater Niagara Medical Society and the Surgical Section of the Ontario Medical Association). Niagara Falls, Ontario

- Oct. 7-10 Surgical Seminar and Annual Meeting, American Rhinologic Society. Illinois Masonic Hospital & Belmont Hotel, Chicago
- Oct. 7-10 Surgical Seminar and Annual Meeting, American Rhinologic Society. Illinois Masonic Hospital & Belmont Hotel, Chicago
- Oct. 7-11 Fifth International Convention on Nutrition and Vital Substances. Konstanz-Zurich, Switzerland
- Oct. 7-11 Fifth International Convention on Nutrition and Vital Substances. Konstanz-Zurich, Switzerland
- Oct. 8 Bedside Clinics. University of Southern California, Los Angeles
- Oct. 8-9 Governor's Conference on Traffic Safety, Medical Division. Sacramento
- Oct. 8-14 Conduct of Labor and Delivery, Woman's Hospital Division, St. Luke's Hospital. New York City
- Oct. 9 Laboratory Methods. University of Southern California, Los Angeles
- Oct. 9-11 Tenth Annual National Music Therapy Conference. The Kellogg Center for Continuing Education, Michigan State University, East Lansing
- Oct. 10 Association of Clinical Scientists. Sheraton-Park Hotel, Washington, D. C.
- Oct. 11 American Otorhinologic Society for Plastic Surgery, Inc. Conrad Hilton Hotel, Chicago
- Oct. 11-14 Eleventh Annual Scientific Assembly, California Academy of General Practice. Hotel Statler, Los Angeles
- Oct. 11-16 American Academy of Ophthalmology & Otolaryngology. Palmer House, Chicago
- Oct. 12-14 Seventh Congress of the French-Speaking Association of Pediatrics. Montpellier, France
- Oct. 12-15 American Association of Medical Record Librarians. Radisson Hotel, Minneapolis
- Oct. 12-16 Vaginal Approach to Pelvic Surgery. Cook County Graduate School of Medicine, Chicago
- Oct. 12-23 Fractures & Traumatic Surgery. Cook County Graduate School of Medicine, Chicago
- Oct. 12-23 Introduction to Radiological Health. N.Y.U.-Bellevue Postgraduate Medical School, N. Y. C.
- Oct. 13-17 International Union Against the Venereal Diseases and the Treponematoses. London
- Oct. 14-15 Medical Society of Delaware. Wilmington
- Oct. 14-17 Twenty-fifth Anniversary Homecoming Meeting, American College of Chest Physicians. Albuquerque, New Mexico
- Oct. 15-16 National Symposium on Controlling Disability and the Problems of Medical Economics (Liberty Mutual Insurance Company). Boston
- Oct. 15-17 Sixth Annual Meeting, Academy of Psychosomatic Medicine. Sheraton-Cleveland Hotel, Cleveland
- Oct. 15-17 American College of Obstetricians & Gynecologists District VI Meeting. Sheraton-Fontenelle Hotel, Omaha
- Oct. 15-17 American Society of Facial Plastic Surgery. Chicago
- Oct. 15-17 Pacific Northwest Society of Pathologists. Gearhart, Oregon
- Oct. 15-17 Arizona Academy of General Practice. Hotel Valley Ho, Scottsdale
- Oct. 16 The Doctor and the Family. University of Southern California, Los Angeles
- Oct. 16-17 Central Neuropsychiatric Association. Hotel Roosevelt, New Orleans
- Oct. 16-18 American Association of Medical Assistants. Benjamin Franklin Hotel, Philadelphia
- Oct. 17-18 First Postgraduate Assembly, Tennessee State Society of Anesthesiologists. Memphis
- Oct. 18-22 Western Orthopedic Association. Brown Palace Hotel, Denver
- Oct. 18-23 American School Health Association. Claridge Hotel, Atlantic City
- Oct. 18-23 American Society of Plastic and Reconstructive Surgery. Hotel Fountainbleau, Miami Beach
- Oct. 18-23 Medical Society of the State of Pennsylvania. Penn-Sheraton Hotel, Pittsburgh
- Oct. 19-23 Eighty-seventh Annual Meeting, American Public Health Association. Convention Hall, Atlantic City

- Oct. 19-23 **Thoracic Surgery.** Cook County Graduate School of Medicine, Chicago
- Oct. 19-30 **Internal Medicine.** Cook County Graduate School of Medicine, Chicago
- Oct. 19-30 **Rehabilitation Nursing Workshop.** Stanford University, San Francisco
- Oct. 19-30 **Surgical Technic.** Cook County Graduate School of Medicine, Chicago
- Oct. 19-31 **International Congress of Therapeutics.** Strasbourg, France
- Oct. 19-31 **Pan American Medical Association.** Mexico City
- Oct. 21-22 **American College of Preventive Medicine.** Hotel Ambassador, Atlantic City
- Oct. 21-23 **Association of Life Insurance Medical Directors of America.** Hotel Statler Hilton, New York City
- Oct. 21-24 **Annual Convention, National Association for Retarded Children.** Cincinnati
- Oct. 21-24 **Pacific Coast Obstetrical & Gynecological Society.** St. Francis Hotel, San Francisco
- Oct. 22-24 **Dermatology for General Physicians.** University of Minnesota, Minneapolis
- Oct. 22-25 **Annual Clinical Meeting, British Medical Association.** Norwich
- Oct. 23 **Stroke and the General Practitioner.** University of Nebraska College of Medicine, Omaha
- Oct. 23-24 **Canadian Society for the Study of Fertility.** Queen Elizabeth Hotel, Montreal
- Oct. 23-25 **American College of Cardiology and American Heart Association.** Philadelphia
- Oct. 23-27 **Joint Meeting, American College of Cardiology & the American Heart Association.** Convention Hall, Philadelphia
- Oct. 24 **Annual Postgraduate Programme on Anaesthesia, Combined Meeting, Section of Anaesthesia of the Ontario Medical Association and the Ontario Division of Canadian Anaesthetists' Society.** Niagara Falls, Ontario
- Oct. 26-28 **National Conference of the National Rehabilitation Association.** Statler Hilton Hotel, Boston
- Oct. 26-30 **General Surgery.** Cook County Graduate School of Medicine, Chicago
- Oct. 26-30 **Occupational Skin Problems.** Institute of Industrial Health, University of Cincinnati, Cincinnati
- Oct. 26-30 **Surgery of the Colon and Rectum.** Cook County Graduate School of Medicine, Chicago
- Oct. 26-30 **Review of Surgery of the Stomach, Duodenum and Small Intestine.** New York University, New York City
- Oct. 26-Nov. 6 **Radiological Health.** N.Y.U.-Bellevue Medical Center, N. Y. C.
- Oct. 26-Nov. 6 **Urology.** Cook County Graduate School of Medicine, Chicago
- Oct. 26-Nov. 6 **Cancer Chemotherapy Course** (Sloan-Kettering Institute for Cancer Research and the Memorial and James Ewing Hospitals). Cornell University Medical College, New York City
- Oct. 27-31 **Second World and Fourth European Aviation and Space Medicine Congress.** Rome, Italy
- Oct. 28-30 **Aviation Medicine.** Stanford University, San Francisco
- Oct. 28-31 **American Society of Tropical Medicine & Hygiene.** Claypool Hotel, Indianapolis
- Oct. 28-31 **Congress of Neurological Surgeons.** Americana Hotel, Miami
- Oct. 28-31 **Diagnostic Cardiac Auscultation.** N.Y.U., N. Y. C.
- Oct. 29-31 **American Psychiatric Association.** Detroit Divisional Meeting, Hotel Statler, Detroit
- Oct. 30 **Fall Meeting, Minnesota Surgical Society.** Minneapolis
- Nov. 1-5 **American Fracture Association.** Roosevelt Hotel, New Orleans
- Nov. 2-4 **American Clinical and Climatological Association.** The Homestead, Hot Springs, Virginia
- Nov. 2-4 **Association of American Medical Colleges.** Edgewater Beach Hotel, Chicago
- Nov. 2-4 **Gallbladder Surgery.** Cook County Graduate School of Medicine, Chicago
- Nov. 2-4 **Gynecology.** University of Kansas School of Medicine, Kansas City
- Nov. 2-5 **Interstate Postgraduate Medical Association, Forty-Fourth Scientific Assembly.** Palmer House, Chicago
- Nov. 2-5 **Omaha Mid-West Clinical Society.** Civic Auditorium, Omaha
- Nov. 2-6 **Gastrointestinal Radiography for Radiologists.** University of Minnesota, Minneapolis
- Nov. 2-6 **Internal Medicine** (American College of Physicians). State University of New York Upstate, Syracuse
- Nov. 2-6 **Review of Surgery of the Biliary Tract and Pancreas.** New York University, New York City
- Nov. 2-13 **General and Surgical Obstetrics.** Cook County Graduate School of Medicine, Chicago
- Nov. 2-13 **General Surgery** (International College of Surgeons), Cook County Graduate School of Medicine, Chicago
- Nov. 2-Dec. 7 **Photomicrography.** Stanford University, San Francisco
- Nov. 3-13 **Gastroscopy and Gastroenterology.** Cook County Graduate School of Medicine, Chicago
- Nov. 4-5 **Thirteenth Annual Postgraduate Assembly.** San Diego County Hospital, San Diego
- Nov. 4-7 **Twelfth Annual Meeting American Association of Blood Banks.** Edgewater Beach Hotel, Chicago
- Nov. 5-6 **Alumni Homecoming Course.** University of Southern California, Los Angeles
- Nov. 5-7 **Use of Laboratory Methods in Office Practice.** University of California, Los Angeles
- Nov. 5-7 **Southwestern Medical Association.** Roswell, N. M.
- Nov. 5-7 **Surgery of Hernia.** Cook County Graduate School of Medicine, Chicago
- Nov. 6 **Gastroenterology Research Group.** Drake Hotel, Chicago
- Nov. 6-7 **Central Society for Clinical Research.** Drake Hotel, Chicago
- Nov. 7 **Society for the Scientific Study of Sex.** Barbizon Plaza Hotel, New York City
- Nov. 7-8 **Tenth Annual Conference of County Medical Societies' Civil Defense Organization.** Morrison Hotel, Chicago
- Nov. 8-11 **Association of Military Surgeons of the United States.** Mayflower Hotel, Washington, D. C.
- Nov. 9-12 **Illinois Academy of General Practice.** Morrison Hotel, Chicago
- Nov. 9-13 **Arthritis and Related Disorders** (for General Practitioners). Bellevue Medical Center, New York City
- Nov. 9-13 **Eleventh Postgraduate Assembly in Endocrinology and Metabolism.** University of California, San Francisco
- Nov. 9-13 **Review of Surgery of the Colon and Rectum** (New York University Post-Graduate Medical School). New York University, New York City
- Nov. 9-13 **Twelfth Annual Course, Diseases of the Chest** (American College of Chest Physicians). Park Sheraton Hotel, New York City
- Nov. 9-14 **Electrocardiography.** New York University, Bellevue Medical Center, New York City
- Nov. 9-20 **Radiochemical Analysis.** New York University, Bellevue Medical Center Post-Graduate Medical School, New York City
- Nov. 9-21 **Laryngology and Bronchoesophagology.** University of Illinois College of Medicine, Chicago
- Nov. 10-12 **Twelfth Annual Conference on Electrical Techniques in Medicine and Biology.** Sheraton Hotel, Philadelphia
- Nov. 11-12 **Thirteenth Annual Fall Postgraduate Clinic.** Michigan Academy of General Practice, Sheraton-Cadillac Hotel, Detroit
- Nov. 11-12 **Clinical Anticancer Drug Research** (U. S. Public Health Service's Cancer Chemotherapy National Service Center). Hotel Statler, Washington, D. C.
- Nov. 12-13 **International Symposium on Cardiology in Aviation.** School of Aviation Medicine, Brooks Air Force Base, Texas
- Nov. 12-14 **Gerontological Society, Inc.** Statler Hotel, Detroit
- Nov. 12-14 **San Diego Academy of General Practice.** Hotel Riviera, Las Vegas
- Nov. 12-15 **American Medical Women's Association.** Arlington Hotel, Hot Springs, Arkansas
- Nov. 12-15 **Eighth Annual Meeting Pacific Coast Fertility Society.** Las Vegas
- Nov. 13-14 **Ear, Nose and Throat.** Stanford University, San Francisco

(Continued on Page lxxi)



INFORMATION PROMPTLY, PLEASE

Our readers will have observed that the JOURNAL, last month, failed to announce two scientific meetings for physicians, one of which was to take place in northern Iowa and the other in Des Moines during September. We deeply regret those omissions, for we regard the publicizing of coming conferences and short courses as one of our principal functions.

The difficulty, in such instances, is that the men in charge of arrangements for the meetings are too late in letting us know their plans.

The JOURNAL is published on or about the first day of each month, and material that is to appear in a particular issue must consequently be in our hands on or about the fifteenth of the preceding month. Program chairmen are asked to take particular note of those facts.

MEDICAL GENETICS

Diverse occurrences such as improvements in tissue-culture technics and studies of the effect of colchicine on cells are adding to our understanding of why the family down the street has several children with 12 toes each.

Since the end of World War II, it has been observed that colchicine will inhibit spindle formation during mitosis so that chromosomes aren't crowded on the spindle, staining technics have been improved, and a simple "squash" cell preparation has been developed, with the result that cytologists are now able to make exciting and important contributions in the field of human genetics. In the past, human geneticists have been concerned largely with tabulating inherited defects and analyzing the resultant statistics. Unlike the students of nonhuman biology, they never before have had an opportunity to correlate inheritance with chromosomal morphology and genetic patterns. It still is impossible for them to pair and number the chromosomes of man to their complete satisfaction, and they haven't worked out the gene patterns. However, their study of man's chromosomal patterns already has revealed several significant truths.

For over 30 years, it was believed that man had 48 chromosomes. Now, it has been demonstrated that he has only 46—22 identical pairs and either an XY or an XX pair.¹ In morphologic studies,

the chromosomes must be matched and paired on the basis of minute differences in the size and position of the centromere (the attachment of the ends of the chromosomes, or the chromatids). Eight chromosomes in the middle-sized range, all with metacentric (near the middle) centromeres, are very difficult to separate, and are frequently confused with the X chromosome of the "sex" pair. With such difficulties hindering the positive identification of the chromosomes, it is not surprising that the first important discoveries have had to do with changes in the absolute numbers of the chromosomes. Jacobs and Strong² reported that patients with Klinefelter's syndrome (physical males with scanty facial, axillary and pubic hair, small testes, slight gynecomastia, feminine distribution of fat, sterility and chromatin-positive somatic cells) have 47 chromosomes—one more than normal. There is evidence that the extra chromosome is one of the "sex" chromosomes, so that the pattern is XXY instead of XX or XY. Similarly, mongoloid patients have been found to be equipped with an extra chromosome,³ a small, acrocentric one (i.e., with the centromere off to one side) resembling the normal Y chromosome, probably as the result of a tripling of one of the normal pairs. It is not thought to be an extra Y chromosome. It is almost certainly characteristic of mongolism. And as if these discoveries were not enough, Ford *et al.*⁴ have now described a patient with Klinefelter's syndrome and mongolism who has two extra chromosomes, quite as might have been expected.

The syndrome of ovarian agenesis, called Turner's syndrome in its complete form, is an instance of a decrease in the number of chromosomes. Patients with this disorder probably do not have a pair of sex chromosomes, but only an XO pattern. Whether this situation represents a loss of the normal X or Y cannot yet be determined, but the door has been opened for fruitful speculation. For example, these patients have a high incidence of coarctation of the aorta. Is this related to the type of X chromosome present, or to the loss of the X or the Y or to neither?

One very practical conclusion to which these observations have already led is that sex determination based on the presence or absence of Barr chromatin⁶ is faulty. The characteristic Barr chromatin masses are found on or near the nuclear membrane in from 25 to 85 per cent of somatic cells (not leukocytes) from females, but in less than 10 per cent of cells from males. One immediately is floored by the difficulty of fitting a patient with Klinefelter's syndrome into this pattern when, living as a male, he has female chromatin masses, male primary sex characteristics, female secondary sex characteristics, and 47 chromosomes with an extra X or Y. Similarly, the patient with Turner's syndrome lives as a female, frequently lacks chromatin masses (male), has female sex characteristics (which do not

mature), and has 45 chromosomes including neither the important X or Y. These patients demonstrate very well that ultimate determination of sex should not be based on any one characteristic, but rather on all factors in the individual's physical and emotional makeup.

Genetic studies to date indicate that coming discoveries will help us understand some of our major medical problems. All four common types of heart disease have strong family links. Cancer and leukemia frequently follow family lines. (Mongoloids have a high incidence of leukemia.) Susceptibility to infection has been related to heredity, and in addition, a large number of intersexes, mental defects and confirmed hereditary and congenital disorders may be associated with chromosomal defects. Recognition of acquired chromosomal characteristics may help us understand some of the hazards of irradiation. And finally, it is quite likely that we can obtain the necessary information so that computers will provide us a real live-wire, first-rate show for television entitled "Matched Marriages."

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ABOUT THIS MONTH'S "LETTER TO THE EDITOR"

The accompanying "Letter to the Editor" written by Dr. Harold W. Morgan, of Mason City, contains some misstatements that we feel impelled to correct.

In his first paragraph, Dr. Morgan says that Blue Shield was originally intended to serve only "the so-called lower income or medically indigent group comprising about one-third of the population" of the State of Iowa. On the contrary, that could not have been its purpose, for when Blue Shield was founded, in 1945, the income limits of \$2,500 family and \$1,500 individual made full-service coverage available to no fewer than 70 per cent of the state's people, according to figures published in the U. S. STATISTICAL ABSTRACT, a publication of the U. S. Department of Commerce. In 1959, by offering a full-service policy to families having incomes aggregating no more than \$5,400, Blue Shield is not recreating the 1945 situation, for

according to the same authority no more than 46 per cent of Iowa people are eligible for full service under the new terms.

Dr. Morgan goes on to declare that Blue Shield wants to compete with the commercial insurance carriers, and even to drive them out of the health-insurance business. Rather, Blue Shield wants merely to enroll enough of the good-risks so as to balance off the losses it expects to take in providing a prepayment scheme for as many as possible of the elderly people who can and who wish to pay a major part of their way, instead of to depend upon out-and-out charity. Blue Shield and the commercial companies have no desire to dispossess of one another. Instead, through their complementary efforts, they are striving to do a task that needs doing, and at the same time to keep the federal government out of the health-insurance picture.

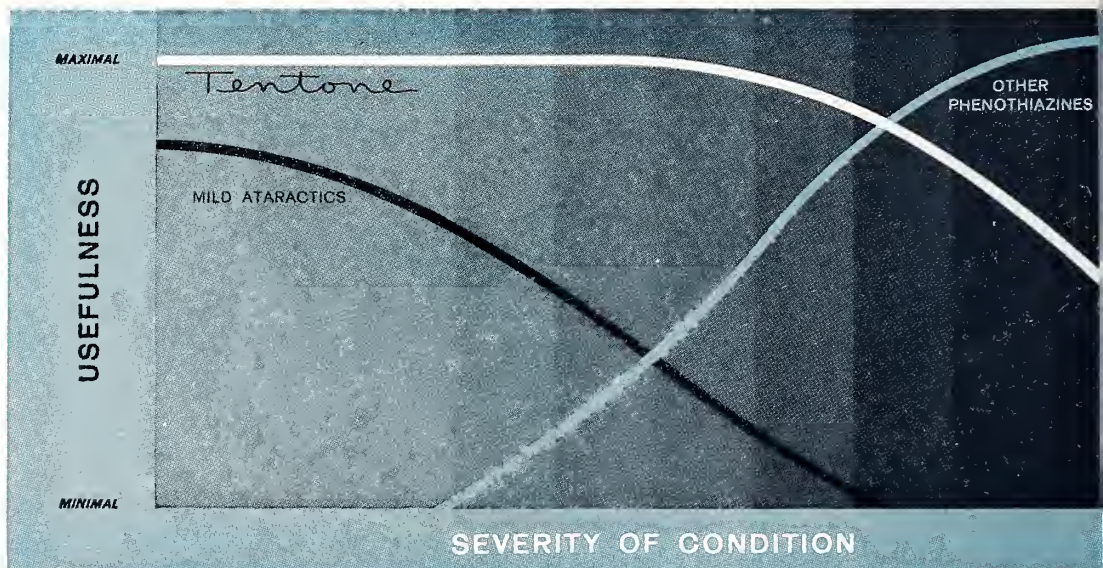
In his second and third paragraphs, Dr. Morgan charges that Blue Shield sets fees for doctors, and in doing so is imposing third-party domination upon them. But except in the case of the Senior-65 plan, on which Blue Shield as well as the participating physicians will operate at a loss, Blue Shield has set its fee schedules on the basis of the doctors' own customary charges. Furthermore, Blue Shield is fully controlled by doctors of medicine. Twenty of the 25 members of the Blue Shield Board are physicians, chosen by physicians.

Now, let's look at a statement that Dr. Morgan makes in his fourth paragraph, that "about 80 per cent of the employed people" in his home county, Cerro Gordo, can qualify for the \$5,400 income limit full-service policy. His key word, doubtless, is *employed*, and whether by using it he excludes the numerous and relatively prosperous farmers, along with other self-employed individuals, we can only guess. But however that may be, it is altogether incredible that an income group including only 46 per cent of the people of Iowa as a whole should contain almost twice as large a share of the residents of Cerro Gordo County!

Next, we must dispute Dr. Morgan's assertion that when the ISMS House of Delegates approved the new Blue Shield offerings, the result "could have been changed by only five votes." As frequently happens in legislative bodies, several ballots were taken on the issue, but in none of them was a question decided by a plurality of nine or fewer votes. When the House of Delegates was called upon to decide whether the Senior-65 plan and the \$5,400 plan should be considered separately, the votes were 56 "No" and 43 "Yes." When the members of the House were asked to approve the Blue Shield portion of the report of the Reference Committee on Insurance and Medical Service, the totals were 65 "Yes" and 37 "No." And when the Reference Committee's report as a whole was proposed for approval, the votes were 67 "Yes" and 24 "No."

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Finally, we protest Dr. Morgan's alluding to "those who control Blue Shield" as if the Blue Shield board members had been put in office by force or connivance. And as for what he calls "their attempts . . . to castigate those . . . who oppose their program," we can't imagine what he has reference to.

Letter to the Editor

Sir:

There has been an abrupt change in the philosophy of the Blue Shield plans not only here in Iowa but in most of the rest of the United States as well. Originally, Blue Shield's policy was based on the premise that the indigent group was taken care of at state expense, that people of average income could take care of their own medical needs, and that the so-called lower income or medically indigent group comprising about one-third of the population should be covered by Blue Shield policies; and this is the package which was sold to the medical profession of Iowa. Now Blue Shield would like to cover all of the population of Iowa and would like to be able to compete with the commercial companies. They need some "gimmick" to give them an edge over the commercial insurance carriers. This gimmick the Iowa State Medical Society has handed to them in the form of full service coverage, which of course cannot be guaranteed or provided by anyone other than the doctors of Iowa. By extending this policy of full service coverage to all or practically all of the people of the state, they have an unbeatable package to sell. They only guarantee the fees as listed in their fee schedule, and the doctors provide the subsidy necessary to complete the program.

This subsidy, although philosophically wrong, was acceptable to the majority of the medical profession of Iowa as long as it was applied only to the low income "medically indigent" portion of the population. The extension of this principle to the majority of the people of the state, together with the attendant administrative evils such as the arbitrary setting of fees, the dictation of methods of treatment, and the interposition of a third party between the doctor and his patient, is the basis for the antagonism expressed by many of the doctors of Iowa against the Blue Shield program.

We have fought in a long court battle in which the Medical Society rallied behind the small group of pathologists, radiologists and anesthesiologists

in protecting the right of a doctor to set his fees for services rendered, as opposed to the control of these fees and their resale by hospital groups. Is the Medical Society of Iowa so short-sighted that it cannot understand the substitution of the words "Blue Shield" for "Hospital Association"? The principle is the same.

The raising of full coverage Blue Shield benefits to \$5,400 in my community takes in about 80 per cent of the employed people. Although the Blue Shield people will disagree, this program and its attendant fee schedule effectively set the fees which may be charged for medical procedures. It is impossible to have one higher fee for those who happen to have no insurance or who are insured with some other company. The same reasoning applies to the "Over 65 Age Group" policy. Are we to charge a patient of 60 whose need is equally great more for the same procedure than we charge to one who happens to be five years older? Is it fair to ask the members of the medical profession, forming about one-tenth of one per cent of the population, to underwrite the medical costs of all individuals over 65? What group is going to help them with their grocery bills, their rent, their taxes and their hospitalization? Will the undertaker charge less for burying them? Will the utility companies lower their rates for their benefit?

Only six per cent of a recently surveyed group of people over 65 had delayed seeing their doctor because of fees.

The purpose of insurance is to help the individual meet the costs of procedures which the insurance covers. It is not to set the fees for those procedures. This fact seems to have been forgotten by the Blue Shield planners.

The attitude of the Iowa State Medical Society in ignoring the opinions of a very large group of Iowa physicians is indeed hard to understand. The result of the crucial vote in the House of Delegates could have been changed by only five votes. To ignore the opinion of this large segment of the Society in a program of such far reaching consequences is, in my opinion, a serious misinterpretation of the purposes for which our Society was founded. The attempts by those in control of Blue Shield to castigate those of us who oppose their program does nothing to indicate that there is good faith on their part. The information sent out from our Medical Society office has failed at all times to recognize that there is a considerable body of opinion opposed to the program as presently outlined by Blue Shield. It is time for the medical profession of Iowa to realize it is about to be devoured by a monster of its own creation. It is time we reconsider this hasty, ill advised and ill conceived program which has been forced upon us.

HAROLD W. MORGAN, M.D.
Mason City

Statements published in these columns are not to be taken as reflections of the opinions or attitudes of the editors of the JOURNAL.

President's Page

At the 1959 Annual Meeting, the House of Delegates endorsed a Catastrophic Blue Cross-Blue Shield policy especially adapted to physicians' needs. Statewide enrollment for this program is to start immediately, and the effective date of the insurance will be announced as promptly as possible.

The program provides coverage for up to 365 days of care.

There is an allowance of up to \$20 per day for hospital room.

There are no waiting periods except for maternity benefits.

Nervous and mental conditions are covered in full.

The maximum for medical-surgical benefits is \$5,000.

Unmarried children in college are covered up to age 23.

Very recently a mailing was sent to all doctors in the state describing these benefits in detail and outlining the enrollment procedure.

Because Blue Shield is the doctors' plan, physicians probably would prefer this insurance even if the benefits were not quite equal to those obtainable elsewhere. But as a matter of fact the benefits that this program offers are by far the best that are available.

John W. Billingsley

President

THE JOURNAL *Book Shelf*



BOOKS RECEIVED

RELEASED MENTAL PATIENTS ON TRANQUILIZING DRUGS AND THE PUBLIC HEALTH NURSE, by *Ida Gelber, R.N.* (New York City, New York University Press, 1959. \$3.00).

THE SURGEON AND THE CHILD, by *Willis J. Potts, M.D.* (Philadelphia, W. B. Saunders Company, 1959. \$7.50).

SYNOPSIS OF OPHTHALMOLOGY, by *William H. Havener, M.D.* (St. Louis, The C. V. Mosby Company, 1959. \$6.75).

SURGICAL SERVICE GUIDE, by *Louis T. Palumbo, M.D.* (Chicago, The Year Book Publishers, Inc., 1959. \$6.00).

EVOLUTION OF NERVOUS CONTROL, ed. by *Allan D. Bass.* (Washington, D. C., American Association for the Advancement of Science, 1959. \$5.75).

BOOK REVIEWS

THE YEARBOOK OF ORTHOPEDICS AND TRAUMATIC SURGERY (1958-1959 YEAR BOOK SERIES), ed. by *Edward L. Compere, M.D.* (Chicago, The Year Book Publishers, Inc., 1959. \$7.50).

Once more, Dr. Compere has collected the important advances of the past year in the field of orthopedic and traumatic surgery, and as usual he has done an excellent job. A fine section on plastic surgery has been appended.

All of us who have used the succeeding volumes in this series regret Dr. Compere's announcement that he will now retire as editor.—*Everett M. George, M.D.*

HISTORY OF AMERICAN MEDICINE, A SYMPOSIUM, ed. by *Felix Marti-Ibanez, M.D.* (New York City, M.D. Publications, Inc., 1959. \$4.00).

This interesting monograph comprises a series of articles on different periods in the history of American medicine which appeared originally in the INTERNATIONAL RECORD OF MEDICINE, which publication, it is worth noting, was founded in Philadelphia in 1837 and today is the second oldest in the United States.

The symposium includes the following: "Introduction: The Spirit of American Medicine"; "Medicine and Practices Among Aboriginal American Indians"; "Medical Education and Medical Schools in Colonial America"; "Medicine in the Era of the American Revolution"; "The Lessons of the War Between the States"; "The Evolution of American Medical Literature"; "The Evolution of Medical Research in the United States"; "A Brief Sketch of the Rise of American Medical Societies"; "The Nineteenth Century American Physician as a Research Scientist"; Trends in American Public Health From the Colonial Period to the Present"; "The Contribution of Holland and Scotland to the Evolution of Medical Education in

America"; and "American Medicine in the World Today—An Historical Perspective and Reappraisal." A complete index is added.

This unique symposium on the medical history of America makes interesting reading.—*Walter L. Bierring, M.D.*

SURGERY OF THE FOOT, by *Henri L. DuVries, M.D.*, with a foreword by *Karl A. Meyer, M.D.*, and an introduction by *Edward L. Compere, M.D.* (St. Louis, C. V. Mosby Company, 1959. \$12.50).

Medical books nowadays are becoming highly specialized, and this volume is an example. Almost any condition of the foot—including normal anatomy and function—is mentioned. The illustrations are unusually numerous, and portray practically every possible abnormality of the foot.

We recommend this book as a compendium of authentic and complete methods of treatment for the ailments of the human foot.—*Everett M. George, M.D.*

HYPERTENSION: THE FIRST HAHNEMANN SYMPOSIUM ON HYPERTENSIVE DISEASE, ed. by *John H. Moyer, M.D.* (Philadelphia, W. B. Saunders Company, 1959. \$14.00).

HYPERTENSIVE DISEASE: DIAGNOSIS AND TREATMENT, by *Sibley W. Hoobler, M.D.* (New York City, Paul B. Hoeber, Inc., 1959. \$7.50).

These two new volumes typify the rapid growth of the physician's armamentarium in the war against hypertension.

The Hahnemann symposium, held in Philadelphia in December, 1958, had an international and cosmopolitan personnel, and the first of the volumes listed here represents the proceedings of the symposium. Many of the papers on the laboratory investigations of the hypertensive state will be of little interest to the practicing physician, but thoughtful summaries by such eminent moderators as William Dock, Francis Wood, Arthur Grollman, William Sodeman, Garfield Duncan and Charles Wolferth bring the research into focus. Panel discussions and tables summarize current recommendations of various authorities for the drug treatment of hypertension, and adequate attention is given to the surgical treatment of essential hypertension.

Dr. Hoobler, director of the hypertension unit at the University of Michigan Hospital, has given us a volume that, for the practitioner-reader at least, is a more practical one. Secondary types of hypertension are delineated, and treatment is outlined for those types that are susceptible to cure. The natural history of essential hypertension is reviewed, and a prognostic

evaluation of the hypertensive patient is described. The principles underlying treatment and the use of specific treatment regimens are then carefully detailed. Twelve appendices contain precise descriptions of tests, working evaluation outlines, and treatment techniques. This is a working handbook to which the practitioner will refer often as he cares for his hypertensive patients.—*Herman J. Smith, M.D.*

TEXTBOOK OF PEDIATRICS, SEVENTH EDITION, ed. by *Waldo E. Nelson, M.D.* (Philadelphia, W. B. Saunders Company, 1959. \$16.50).

Five exciting years of medicine have elapsed since the last revision of this classic textbook of pediatrics went on the market. Eighty-one contributors have joined with the editor in presenting this greatly revised seventh edition. Many sections have been given a new appearance; some have been rewritten by different authors; and several new sections have been added. The revisions have had the effect of shortening the text by about 100 pages, but there has been no striking change in the general format.

The test of time has established Nelson's **TEXTBOOK OF PEDIATRICS** as the standard text in its field. This new edition should find its place in the library of every physician who is concerned with the care of infants and children.—*Marion E. Alberts, M.D.*

THE ONSET OF STUTTERING: RESEARCH FINDINGS AND IMPLICATIONS, by *Wendell Johnson, Ph.D.*, and associates. (Minneapolis, The University of Minnesota Press, 1959. \$5.00).

This volume of research findings and implications is the third in a massive and complicated study of Iowa stutterers. Apparently, the work is statistically well controlled, and the experimental design is as well worked out as the present state of knowledge permits.

The two previous publications concerning stuttering are summarized, in this book, and the research data and plan are set down.

The implications of the research do not appear particularly remarkable, and they are those that could have been predicted by many practicing psychiatrists, psychologists and others. It is implied that stuttering is an individual's response to a social situation existing between the speaker (a child) and a listener (often a close relative and usually the child's mother). This hypothesis conforms with current concepts of disordered speech.

But the fact that the conclusions of this research are not dramatic in no way detracts from the value of the work that has been done. On the contrary, the research contributes considerably to the confirmation of current

psychiatric theory and concept. However, this is not a book which would find constant use in a practicing physician's library. It is one for researchers and specialists in the field of disordered speech.—*Howard V. Turner, M.D.*

OMAHA MID-WEST CLINICAL ASSEMBLY

The Twenty-seventh Annual Assembly of the Omaha Mid-West Clinical Society will be held at the Civic Auditorium, in Omaha, on November 2-5. Attendance will entitle AAGP members to a maximum of 33 hours of Category I credit.

Dr. John T. Reynolds, of the University of Illinois, will speak on biliary tract disease, surgery for diverticulitis of the sigmoid colon, emergency treatment of gross hematemesis, and acute intestinal obstruction. Dr. Claude E. Welsh, of Boston, will discuss the management of gastric ulcer, cancer of the colon, cancer of the stomach, and chemotherapy of tumors. Dr. Wm. J. Engel, of the Cleveland Clinic, will speak on renal hypertension, congenital anomalies of the G-I tract, and the urologist's role in diagnosing abdominal masses.

Dr. Simon Rodbard, of the University of Buffalo, will lecture on arteriosclerosis, the significance of heart and arterial sounds, and hypertensive mechanisms. Dr. Louis M. Hellman, of the State University of New York, will talk on the complications of incomplete abortion, late puerperal hemorrhage, the relationship between abnormal menopausal bleeding and carcinoma of the endometrium, and the use of Papanicolaou slides. Dr. Sumner S. Cohen, of the University of Minnesota, will talk on acute and chronic pulmonary infiltrates, pulmonary annular shadows and the pulmonary complications of cardiac disease.

Dr. David W. Kramer, of Jefferson Medical College, will discuss thromboembolism, arterial thrombosis, and the possible relationship between atheromatosis and diabetes mellitus. Dr. Leo Alexander, of Tufts University, is to speak on psychotherapy in general practice, and on tranquilizers and energizers. Dr. Roscoe J. Kennedy, head of ophthalmology at the Cleveland Clinic, will speak on the ocular changes in hyperthyroidism, the evaluation of ocular fundus changes in general practice, and strabismus. Dr. Claude N. Lambert, of the University of Illinois, will discuss the painful shoulder, the examination of the low back, and "whiplash" injuries. Dr. Lawson Wilkins, of Johns Hopkins, will talk about hypothyroidism in infancy and childhood, the problem of stunted growth, congenital virilizing adrenal hyperplasia, and the masculinization of the female fetus due to the administration of oral progestins during gestation.

The \$12 registration fee includes one dinner and two luncheons. For additional information, address Dr. John H. Brush, 1613 Medical Arts Building, Omaha 2.

Attend the
AMA CLINICAL MEETING
Dallas
December 1-4

STATE DEPARTMENT OF HEALTH

Edmund G. Zimmerman
COMMISSIONER

IOWA POLIOMYELITIS—1959

The accompanying chart shows the poliomyelitis cases reported to the State Department of Health by week of reporting, rather than by date of onset of the illness. There is usually a time lag of about a week between these two dates.

This year's outbreak began in Polk County, and the peak number of cases came between the twenty-fifth and twenty-eighth weeks (June 20-July 11). Although cases continue to be reported in Polk County, the numbers reported in the rest of the state have exceeded those in Polk since the beginning of the twenty-ninth week (July 18). Although cases have occurred in 52 counties, as shown in an accompanying table, counties adjacent to Des Moines and in the north central part of the state have shown the highest incidences. Since September has frequently been the high-incidence month for poliomyelitis in Iowa, and since the infection has already been reported in 52 counties, at the time that this is written, it seems probable that the rates will remain high through September and well into October this year in Iowa.

The last report from the Public Health Service (for the week ending August 29) stated that the number of paralytic poliomyelitis cases reported for that week in the entire United States was the highest attained thus far this year. The 318 newly reported cases brought the total of paralytic cases in the United States to 2,449 for the year. During the same period in 1958, 1,054 paralytic cases were reported.

To date, eight deaths have been officially reported to the State Department of Health, but we know that there are four or five others. Our present information regarding the ages and immunization records of those fatalities are as follows:

County	Age	Number of Immunizations
Black Hawk County	4	0
	32	0
Cerro Gordo County	27	0
Harrison County	24	0
Polk County	5	0
	9	3
	19	2
Woodbury County	13	0

Demands for poliomyelitis vaccine throughout the state were high until the newspapers reported lowered attack rates in Polk County. In consequence of those newspaper accounts, the Iowa public apparently began to feel that the danger of poliomyelitis was past, and the demand for vaccine definitely began slackening at the start of the week of August 8. Although wholesale and retail poliomyelitis vaccine was in short supply in Iowa late in June and during July, the supply is now plentiful. Manufacturers reported that 2,876,837 doses of vaccine were shipped to communities in the United States during the week of August 28. Unshipped supplies at that time totalled over 3,000,000 doses.

IOWA POLIOMYELITIS—1959

By Week of Reporting
(January 1 Through September 5)

	Prior to 20th wk. (Up to & including May 16)	21st-24th wk. (May 23-June 13)	25th-28th wk. (June 20-July 11)	29th-32nd wk. (July 18-Aug. 8)	33rd-36th wk. (Aug. 15-Sept. 5)
Polk County	4	1 2 3 7 13	17 8 20 15 60	5 9 6 5 25	5 11 9 10 35
Iowa Minus Polk County	0	2 2	2 12 11 25	15 9 16 21 61	20 30 10 23 83
Entire State	4	15	85	86	118

POLIOMYELITIS CASES IN IOWA
Week Ending September 5, 1959

County	New Cases	Total Cases
Adams		2
Audubon		1
Benton		1
Black Hawk	6	12
Boone	1	10
Bremer		1
Buena Vista	1	4
Butler		3
Cerro Gordo		6
Clay		1
Clinton	1	1
Dallas	3	19
Davis		1
Decatur		1
Des Moines	1	6
Dickinson		1
Dubuque		4
Guthrie		5
Floyd	1	1
Hardin	1	1
Harrison		8
Henry		1
Howard		1
Jackson		2
Jasper		10
Johnson		2
Jones		1
Lee	2	3
Linn	1	6
Lucas		2
Madison		3
Mahaska		2
Marion	1	3
Marshall	1	3
Monona		1
Montgomery		2
Muscatine		1
Pocahontas		1
Polk	10	136
Pottawattamie		2
Poweshiek		3
Sac		1
Scott	2	11
Story		1
Sioux		1
Union		2
Washington		1
Warren		1
Webster		9
Winneshiek		1
Woodbury	1	5
Wright		1

Paralytic	136
Non Paralytic	139
Unspecified	33
Total cases this week	33
Total cases last week	19
Total cases same week last year	9
Total cases same date last year	32

ANTIVENIN SUPPLIED TO POISON
INFORMATION CENTERS

The five Iowa Poison Information Centers set up with the aid of the Division of Maternal and Child Health of the State Department of Health have recently received small supplies of antivenin for emergency use. This action was taken so as to make antivenin more readily accessible throughout the state over weekends, during holidays and at night. The expiration date on the antivenin is five years hence, and therefore the service will be useful even though requests for it may be few and far between.

The physician in charge of the Poison Information Centers have been told that if patients can pay for the antivenin, a price is to be collected and the money remitted to the State Department of Health. If not, the Division of Maternal and Child Health is to be notified that the antivenin has been used for a patient who cannot pay for it. The material will then be replaced at the Poison Information Center without cost.

The five centers and sub-centers to which the material has been sent and the physicians in charge are as follows:

- Poison Information Center
Iowa Methodist Hospital, Des Moines
Dr. Everett A. Nitzke
- Poison Information Center
Lutheran Hospital, Fort Dodge
Dr. Charles Baker
- Poison Information Center
Mercy Hospital, Mason City
Dr. Harold Morgan
- Poison Information Center
Dickinson County Hospital, Spirit Lake
Dr. Don F. Rodawig
- Poison Information Center
Boone County Hospital, Boone
Dr. D. E. Kane

Please Mark Your Calendar
ISMS ANNUAL MEETING
April 24-27, 1960
Veterans' Memorial Auditorium
Des Moines

LIVE-VIRUS POLIOMYELITIS VACCINE

Following are the principal points in a report submitted to Surgeon General Leroy E. Burney, of USPHS, on August 28 by his Committee on Live Poliovirus Vaccine headed by Dr. Roderick Murray, chief of the USPHS Division of Biologics Standards.

1. Three sets of attenuated polio virus strains have been proposed for use as oral vaccines. The Sabin strains have all had extensive field trials in Eastern Europe, Mexico and Singapore; the Lederle strains have been widely used in Latin America; and the Koprowski Type 1 strain has been used in a large trial in the Belgian Congo. However, no significant amount of field information is available concerning Koprowski's Type 2 strain, and only limited information is available in relation to his Type 3 component.

2. There is considerable difference in the neurovirulence or damaging effect on nerve cells for monkeys of the three sets of strains as determined by intrathalamic and intraspinal inoculation. On this basis, the Sabin group has an advantage over the others, but none of these strains is completely nonvirulent when inoculated into monkeys by the intraspinal route.

3. No evidence has been reported to indicate that any of these vaccines produced any harm to the individuals to whom they were administered. The thoroughness with which the observations were made has varied in different studies, however.

4. In some studies, the ability of these strains to multiply and thus produce antibodies is less than could be expected on theoretical grounds. Apparently a number of factors operate in the field which may prevent alimentary infection and the subsequent development of immunity.

5. A number of workers have reported that virus excreted by vaccinated individuals had shown increased neurovirulence for monkeys. There is considerable disagreement among investigators as to the significance of these observations.

6. Field experience with any strain to date cannot be interpreted as affording reasonable proof that the community of nonvaccinated persons will be free of danger from possible reversion of virulence in excreted virus under a great variety of readily anticipated circumstances. This is one of the most important of the unsolved problems.

7. There is evidence which indicates that under some circumstances the simultaneous administration of all three types of virus may be effective.

In addition to the problem referred to in points 5 and 6 above, the principal difficulties to be surmounted before live-virus vaccine can be released for general use are the following:

1. In the course of a large-scale field trial, the capacity of the virus to spread among contacts means that some nonvaccinated controls will become infected and thus presumably will be made immune—a complicating factor in such a study.
2. Standards must be developed on which to determine the presence or absence of stray agents in the vaccine. Over 40 simian agents, including B-virus, have been encountered in the routine testing of killed poliovirus vaccine. Little is known of their pathogenicity for man.
3. The potency of the vaccine must be established by demonstrating the production of specific antibodies in 90 per cent or more of inoculated susceptibles.

MORBIDITY REPORT FOR MONTH
OF AUGUST—1959

Disease	1959 Aug.	1959 July	1958 Aug.	Most Cases Reported From These Counties
Diphtheria	0	0	0	
Scarlet fever	63	103	91	Jefferson, Johnson, Polk
Typhoid fever	1	0	2	Chickasaw
Smallpox	0	0	0	
Measles	61	90	210	Buena Vista, Clay, Linn
Whooping cough	45	62	12	Black Hawk, Buena Vista, Clay, Des Moines
Brucellosis	18	13	16	Dubuque, Scott
Chickenpox	43	48	31	Boone, Buena Vista, Clay, Linn
Meningococcic meningitis	0	1	0	
Mumps	34	52	165	Linn, Scott
Poliomyelitis	133	96	20	Dallas, Black Hawk, Harrison, Jasper, Polk
Infectious hepatitis ..	15	13	7	Carroll, Floyd, Scott
Rabies in animals ...	24	24	19	
Malaria	0	0	0	
Psittacosis	0	0	1	
Q fever	0	0	0	
Tuberculosis	46	20	56	For the state
Syphilis	137	73	105	For the state
Gonorrhea	101	90	105	For the state
Histoplasmosis	0	0	1	
Food intoxication ...	0	0	0	
Meningitis (type unspecified)	1	0	0	Audubon
Diphtheria carrier ...	0	0	0	
Aseptic meningitis ...	4	5	16	Hamilton
Salmonellosis	7	2	1	Johnson
Tetanus	2	0	0	Allamakee, Woodbury
Chancroid	1	1	0	
Encephalitis (type unspecified)	1	0	0	Webster
H. influenzal meningitis	1	0	2	Webster
Amebiasis	9	3	6	Boone
Shigellosis	1	3	3	Webster
Influenza	0	0	0	

In the Public Interest



The Voluntary Way

Nowadays, when someone proposes that something be established or changed, as he thinks, for the public benefit, he quite automatically starts his remarks with one or another variant of the declaration "There ought to be a law . . .," thereby showing his confidence that government can do anything and everything. Yet, as a matter of fact, most people recognize that government rarely can do a job as economically or as efficiently as it can be done by a group of dedicated individuals, and thus, before calling upon a state or federal agency to undertake a task that needs doing, people should take pains to discover whether there may not be such a group that is either willing to start work on the job or perhaps is already engaged upon it—preferably, of course, at its own expense.

Dedication—a willingness to sacrifice or at least to subordinate one's private advantage to that of one's fellow men—is regarded as the prime characteristic of professional men and women, and doctors of medicine are professional people—so much so that the terms *physician* and *professional man* are regarded as virtual synonyms. Consequently, America's health problems can best be left for them to solve.

For about a half-century, American health care has been the finest in the world, and during the past 15 or 20 years it has become so much superior to that which was available here during the immediately preceding decades that there is no comparison. The principal explanation for those facts is that doctors of medicine have planned the improvements, and have implemented those plans, at considerable sacrifice to themselves in time and also, to some extent, in money.

For one thing, American doctors have the tradition of sharing discoveries with one another altogether openhandedly, so that the sick everywhere may benefit fully and immediately. In order

to facilitate prompt and complete exchanges of findings, the national and regional medical societies publish scores of journals and arrange countless conferences and short courses for their members. Furthermore, it is considered unethical for a doctor to keep a therapeutic method or device secret from other physicians, or for him to make a profit from its use by his medical colleagues. Incidentally, the public seems not fully to recognize that organized medicine's principal objection to the alleged cancer cure Krebiozen, aside from the fact that its effects haven't yet been fully demonstrated, is that its sponsors insist on violating both of those precepts—i.e., they are endeavoring to keep its composition a secret from the profession as a whole and are intent on making money from it. In contrast, hundreds of physicians have made full disclosures of their research and have made no attempt to turn their discoveries into dollars.

DOCTORS ARE HELPING IMPROVE THE STANDARDS OF CARE

Of course health care progress during the past 50 years has occurred outside the test tubes quite as often and as spectacularly as within them, but in every instance doctors, of their own volition, have taken the lead and have done a great deal of the work. Organized medicine instituted hospital accreditation, for example. It has secured vast improvements in the instruction offered in medical schools, and has set up requirements for internships and residency training programs. It has established qualifications for specialists, and has made and enforced many other standards without the government's insisting that it do so.

At a level nearer to the grass roots, medicine not only has realized that it must police itself and perfect the facilities with which it works, but is hard at work at the task. Every hospital, public

and private, that is staffed by doctors of medicine has a medical staff organization that cooperates with the board of trustees in setting the rules and in managing the institution. In addition, the staff holds meetings to review past mistakes and to find ways for avoiding them in the future, and other meetings to hear lectures or view films designed to help the member doctors improve their work. Moreover, in each hospital nowadays there is a tissue committee, a group of doctors that endeavors to protect patients against unnecessary or inept surgery, and in some institutions utilization committees are being set up for the purpose of discouraging the overuse of facilities and consequent waste of money for patients and insurance companies.

In this connection, it is worthy of note that the Iowa State Medical Society, two years ago, advocated the passage of legislation to permit the Board of Medical Examiners to suspend or revoke the licenses of doctors who have violated the law. Furthermore, the ISMS and many of its constituent county medical societies have grievance committees that investigate misunderstandings between doctors and patients, and endeavor to bring them to amicable settlements.

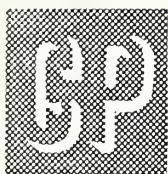
THE STATE MEDICAL SOCIETY IS SEEKING ANSWERS TO OTHER PROBLEMS

Like similar organizations of doctors in other states, the Iowa State Medical Society recognizes and is attempting to solve a great number of health problems. As regards inequitable distribution of physicians, it is making a detailed study designed to show not only where doctor shortages exist today, in the State of Iowa, but also where there are likely to be too few physicians 10 or 15 years hence, unless steps are taken to remedy the situation. The ISMS maintains a Physician Placement Bureau from which communities seeking doctors can get the names of physicians who are about to choose places to practice, and as was explained on this page last month, the Society has

collected from its members the sum of \$150,000 from which it makes an average of 18 or 20 loans each year to medical students who are in danger of having their education interrupted by financial difficulties. Furthermore, two years ago, the ISMS helped to secure the liberalization of the law governing the licensure of foreign-trained physicians, so that larger numbers of them might be admitted to practice here in Iowa.

The Iowa State Medical Society has a total of about 40 active committees, almost every one of which is making progress toward finding a solution for a vexatious health problem. One of them is studying ways of increasing the number of nurses trained in this state. Another is encouraging employers to explore ways in which industrial medicine can be adapted to Iowa's numerous factories and other businesses, few of which are large enough to maintain separate facilities and medical and nursing personnel. Still others are studying the medical aspects of the problems of the aged, planning postgraduate short courses for presentation to doctors here and there throughout the state, cooperating in civil defense planning, working with the Public Safety Commissioner on improvements in driver licensing, helping to standardize the facilities and procedures of blood banks, reexamining the role of physicians in the placement of babies for adoption, perfecting the preceptorship scheme under which each senior medical student is enabled to serve a month's apprenticeship with a physician in private practice, and engaging in innumerable other projects from which the people of Iowa will be the eventual beneficiaries.

Doctors of medicine, then, are dedicated people who can be relied upon to find answers to the public's health problems. They place their patients' welfare above their own individual concerns, and on their own initiative and to a considerable extent at their own expense in terms of both time and money, they constantly are finding ways of extending and improving health care.



Iowa Academy of General Practice

WORLD CONFERENCE ON MEDICAL EDUCATION

V. L. SCHLASER, M.D.

The American Academy of General Practice was organized in 1947, primarily to promote postgraduate education and to achieve recognition for general practitioners. Postgraduate education, however, did not originate with the AAGP. All board specialties and many medical societies conduct postgraduate conferences to further the medical education of their members, and many of our medical schools present postgraduate courses and conferences annually. The AAGP, however, is the only organization of physicians that makes continuing postgraduate education a requirement for the maintenance of membership.

Medical education and postgraduate studies in the United States are recognized as supreme throughout the world, and in our good fortune we are not likely, at all times, to realize the deprivations in which our colleagues in many other countries have to work. The needs of doctors in some of those other lands were brought home to those of us who were privileged to attend the World Conference on Medical Education that was held in Chicago in August under the joint sponsorship of the World Medical Association, the World Health Organization, the Council for International Organization of Medical Sciences and the International Association of Universities.

Scientific papers were presented by 125 speakers representing 61 countries, and simultaneous translations were provided so that members of the audiences could hear them in their choice of English, French or Spanish. The Conference was intended to provide a common ground for a free exchange of scientific information and experiences.

The president of the Conference, Dr. Raymond B. Allen, chancellor of the University of California at Los Angeles, declared that although doctors are very busy people, all of them must continue to study in order to learn of the advances being made by researchers throughout the world, and to apply the fruits of that work in preventing, ameliorating and curing disease.

Dr. Louis H. Bauer, of New York, secretary of the World Medical Association, stressed the importance of helping solve the economic and prestige problems that prevent many doctors from choosing to make careers of teaching or research work. He went on to point out some of the new fields in which medical researchers are being called upon for help. For example, success in sending and retrieving men to and from outer space can be achieved only through the combined efforts of medical and engineering scientists. He also stressed the importance of correlating the provision of medical education facilities with economic development, remarking about how useless it is to send educational films and slides to hospitals and medical schools in areas that lack a source of electricity. Furthermore, he urged physicians to develop keen insight, and an ability to evaluate all aspects of the patient's life as they may relate to the state of his health.

Dr. Uttamchand K. Sheth, professor of pharmacology at a medical school in Bombay, made a strong plea for improving the standards of medical education in his country, where there is widespread suffering because of deficiencies in food supplies, clothing and shelter. He said that a major problem of postgraduate education in India stems from the recent rapid increase in the numbers of medical schools there. In 1926, there were only 10 such institutions, but in response to the demand for doctors the number now has been raised to 50, and there is an acute shortage of medical teachers. Also, the enormous patient loads prevent doctors from engaging in teaching and research. The average outpatient load is 2,400 at each hospital every morning. Dr. Sheth made a strong plea for an exchange of medical teachers, and also asked for assistance in remedying the gross inadequacies of the libraries at medical schools in India.

Dr. Victor Johnson, director of the Mayo Foundation for Medical Education and Research, cited the need for medical research to fill the many remaining gaps in man's knowledge of the mechanisms of disease. He urged physicians everywhere to become interested in research early in their careers.

Dr. Edward Grzegorzewski, professor and head

of the Department of Preventive Medicine and Public Health at the University of Puerto Rico, made a plea for international cross-fertilization of medical ideas. He advocated bringing advanced medical knowledge to the places within each country where they can usefully be absorbed, rather than taking physicians away from those places for advanced training in medical centers.

Dr. Carlos Gomes D'Oliveira, director of a hospital service in Lisbon, praised the work of general practitioners and declared them to be the pillars of any good health program, utilizing specialists when extraordinary problems arise in particular fields.

Dr. Juan Allwood-Paredes, from the University of El Salvador School of Medicine, told the Conference that general practitioners enjoy the friendship and confidence of the patient and his family, and are thus best qualified to study the patient's disease in all of its ramifications. He felt that the general practitioner's ineligibility for hospital practice in many areas works to the detriment of the patient. He urged closer cooperation between general practitioners and hospitals, saying that the generalist should be allowed a permanent place on the therapeutic team so that the principles of comprehensive medical treatment that are instituted during the patient's hospitalization may be continued during the post-hospital period of treatment and rehabilitation.

Dr. Malcolm E. Phelps, of El Reno, Oklahoma, one of the founding fathers of the AAGP, stated that a survey made by medical societies and placement bureaus has revealed that the demand for general practitioners is approximately five times as great as the demand for doctors trained to care for only certain types of disease. It was his feeling that this demand has been largely ignored by some of our medical schools in their effort to satisfy those who advocate mass-service, production-line medical care. Dr. Phelps expressed the idea that the approach to medical practice should be characterized by concern for the "whole patient."

Dr. R. M. Tadio, a public health officer from Belgrade, Yugoslavia, expressed the view that medical students throughout the world are overburdened by theoretical teaching. His plea was for a change in the internship curriculum so that the young physician can be given an opportunity to study the socio-economic influences on human health. He would have internes study the effects of housing, nutrition, occupations, environmental sanitation and other factors on the health of the population.


Professor Z. I. Yanushkevichius, director of the medical institute of Kaunas, Russia, explained to the Conference the position of the doctor in the U.S.S.R. He was high in his praise of the Russian

system of medical care and of the Russian way of training physicians. In the U.S.S.R., he said, the doctor is an employee of the state, entrusted with the task of protecting public health, and he thinks that the government organizes and conducts postgraduate medical education in accord with the needs of the people. He claimed that the first advanced training institute for doctors in the world was organized in Petersburg, Russia, in 1855. He stated that young doctors going into specialization are taught the fundamentals of Marx-Lenin socialism. In the U.S.S.R., he reported, there are 11 advanced training institutes maintained by the state, and more than 27,000 doctors go through a course of postgraduate training each year.

This sketch of the Conference has been presented because every American physician is interested in learning the individual feelings about medical education and progress of his colleagues all over the world. We realize that most of the areas represented at the Conference lack the democracy, freedom and wealth of the United States. Therefore, it is only natural that they should look to us for help.

KANSAS CITY SOUTHWEST CLINICAL CONFERENCE

The Thirty-seventh Annual Fall Clinical Conference of the Kansas City Southwest Clinical Society will take place on October 5-8 in the Municipal Auditorium, Kansas City, Missouri. The new program features include forums, symposia, seminars, workshops, and specialty luncheons designed to give coverage in depth by means of group instruction. The guest lecturers will include Dr. Wm. Dameshek, hematologist, Tufts University; Dr. Richard Bing, internist, Wayne University; Dr. Brian Blades, surgeon, George Washington University, Washington, D. C.; Dr. Eugene M. Bricker, surgeon, Washington University, St. Louis; Dr. Edw. A. Gall, pathologist, Cincinnati University; Dr. Keith S. Henley, internist, University of Michigan; Dr. Richard H. Marshak, radiologist, New York City; Dr. G. Gordon McHardy, internist, L.S.U.; Dr. William T. Moss, radiologist, Northwestern; Dr. Edw. S. Orgain, internist, Duke University; Dr. Paul Oglesby, internist, University of Illinois; Dr. Charles B. Puestow, surgeon, University of Illinois; Dr. Ralph A. Reis, obstetrician and gynecologist, Northwestern; Dr. Louis M. Rousselot, surgeon, New York University; Dr. Harold A. Solfield, orthopedic surgeon, Northwestern; Dr. H. S. Van Ordstrand, internist, Cleveland Clinic; and Dr. William L. White, plastic surgeon, University of Pittsburgh.



Woman's Auxiliary News

OUR PRESIDENT SAYS—

Vacations are over, and Labor Day has reminded us that the year's activities are about to begin in most of our organizations. Committee appointments have been accepted, and the YEAR BOOK has gone to press. October is the season of renewed activity, with children well settled in their school routine, bands practicing and football schedules well under way. We as State Auxiliary officers, looking over our team, find that we lack depth in many positions, and though in our recruiting we have much to offer in friendships, fun and personal satisfaction, like many football coaches we have little to promise in the way of plush jobs or bonuses.

For this reason, your state officers feel they should become better acquainted with county Auxiliaries so as to correlate state and county activities, pool experiences, look over the results of past efforts and find some recruits. Mrs. Nielsen, Mrs. Pearlman and I plan to visit as many of the counties as possible this year. We have written to county presidents asking for suggested dates so that we can work out a schedule permitting us to visit several Auxiliaries on each of our trips to the various parts of the state. Because many of the Auxiliaries meet on one of the first few days of the month, there will be many conflicts, and it will be impossible for us to attend regular meetings in all cases. Perhaps it may be more convenient in such instances for us to meet with a few members or with the officers, but we hope to give all of you, either at first or at second hand, some of the "ripest fruits" of the Na-

tional Convention and the Chicago Fall Conference.

Since it is our wish to have maximum time for exchanging ideas with you, on such visits, we hope you won't feel called upon to plan programs or provide entertainment for our benefit. This is a plan that has been used in many other states, and we hope that by enabling us to know you better, it will help us to improve the correlation of Auxiliary work at the county and state levels.

—MRS. E. A. LARSEN

POLICY CHANGE REGARDING TODAY'S HEALTH

As of July 1, 1959, the Woman's Auxiliary was relieved of responsibility for promoting the sale of subscriptions to TODAY'S HEALTH. Henceforth, there will be no subscription contest or any kind of sales credit or commission given to local or state Auxiliaries.

A subscription to TODAY'S HEALTH is to be included among the perquisites of each doctor's AMA membership, and mass media will be used in selling subscriptions to the general public. Doctors are urged to make sure that a copy of the current issue is available at all times in their reception room.

Gift subscriptions for legislators, schools, libraries, beauty shops, etc. can still be obtained at the special rate of \$1.50 per year if ordered through county or state medical society officers. Otherwise, the price is to be \$3.00.

Auxiliary chapters which have included a year's subscription to TODAY'S HEALTH in each of their members' dues can submit bulk orders at the 50 per cent rate of \$1.50.

All current subscriptions being addressed in the names of physicians will be transferred to their home addresses and be directed to the physicians' wives or other members of their families, since the doctors will be receiving complimentary copies at their office addresses.

Mr. Robert Enlow, manager of the Circulation and Records Department of the magazine, has expressed his gratitude to the Auxiliary for the promotional work it has done in the past. The National Auxiliary officers feel that the time and

AMEF Note Paper and Envelopes

\$1.00 for a pack of 10 each

Order from Mrs. Robert Updegraff

630 Foster Drive

Des Moines 12, Iowa

Proceeds will be donated to the American
Medical Education Fund

energy that Auxiliary members once spent on this worthwhile project can now be transferred to other activities.

NURSING STUDENTS LOOK AT FUTURE NURSES CLUBS

The California League for Nursing's Committee on Careers in Nursing and the Student Nurses' Association of California were interested in getting more specific information about the value of Future Nurses' Clubs. Together these two organizations developed a questionnaire for first-year nursing students. Perhaps some of the glamor of a nursing career had been dulled for these students, but they had not been in nursing long enough to have forgotten what had happened in their high school clubs. The purpose of the survey was to find out how many of the students had been members of future nurses' clubs; what they thought about the clubs; and what ideas they had about strengths and weaknesses of the clubs.

Even to those who had been working with these young people, some of the answers were surprising. Asked when they had first thought of entering nursing, 58 per cent of the students said that they had first thought of it before they entered the tenth grade; 13 per cent had considered it for more than two years. Is this an indication that counseling programs should begin with junior high school students?

The answers to, "If there was a club and you were not a member, why?" were what might be expected. Some respondents said they belonged to too many clubs; some were working part time and could not spare the time; some said the club was very poorly organized and had poor leadership; some indicated they had not been sure that nursing was what really interested them. There does not seem to be much that can be done about changing some of these answers, but the statements about poor organization and leadership should alert sponsors and advisers to doing something to strengthen the clubs. Many respondents pointed out that strong and well-laid plans must be made if the clubs are to prosper.

Additional questions were asked to the 270 students who had been members of clubs. The following is a summary of the students' opinions regarding the weaknesses and strengths of the clubs.

Some of the clubs had sponsors from outside the school, but many of the students did not know who the sponsor was or what organization she represented. For example, one student indicated that the outside sponsor of her club was a school of nursing. Inquiry showed that this particular sponsor had graduated from that school of nursing and had evidently conveyed this impression to the group. Several indicated that the sponsors did contribute quite a bit—helping with field trips, planning social gatherings, and so on.

The position of faculty adviser to the average club was about evenly divided between a nurse and a teacher. In the opinion of the respondents, the majority of the advisers gave good direction. About one-half of the students felt that the club would be valuable to any girl, and almost all of the others felt it would be valuable only for those going into nursing.

How much do future nurses' clubs help in preparing students for life in a nursing school? A large group felt the experience had helped them somewhat; others felt that it had not been helpful enough. Typical of the answers were: "Yes, I knew exactly what I was getting myself into"; "It didn't give an accurate picture of what nursing is"; "Yes, it prepared me for the patient-nurse relationship"; "It encouraged me, and the leaders made it plain that nursing wasn't easy." Evidently clubs can improve on this part of their counseling program.

In the order of frequency, suggestions for improving the clubs' programs were: (1) work experience in a hospital or health agency, (2) lectures and discussions, (3) field trips, (4) better advisers and sponsors, (5) better-planned programs and better organization, (6) more interest and more publicity, (7) student nurse participation, and (8) films.

It was interesting that lectures and discussions were so high on the list. Many respondents indicated that in this way students could learn the facts they needed to help them decide whether nursing was the correct choice. Some suggested that the high school and the community might be more helpful and cooperative.

Most of the respondents indicated that their clubs were part social and part program. There appeared a rather strong feeling that the clubs should concentrate on program and service. Although there were some who did not rate the programs of their clubs, 41 felt they had very poor programs; 58 felt they had good ones.

Whether or not it is advisable for the club members to have some experience in a hospital or other health agency has long been a subject for discussion among advisers and sponsors. These former club members had some very definite ideas on this question. Of the 241 replies to this question, 231 said that such experience should be given.

From these replies, it seems that some type of future nurses' club experience in a hospital or other health agency can be helpful to prospective nurses in either a positive or a negative way. One student pointed out that the experience might discourage some girls—who should probably be discouraged anyway. We must recognize that many future nurses' clubs include members who are not really interested in or suited for nursing.

—Condensed from an article by
Mabelclaire Norman, in the
June, 1959, NURSING OUTLOOK.

THE MOTORIST'S PRAYER

"Oh God, give me a firm hand and a sharp eye so that I will not injure any person while driving. Thou hast given life, and I pray that none of my actions will take away or spoil the gift which comes from Thee.

"Grant that I may refrain from the kind of indulgence that would impair my skill and thus endanger the life and safety of my fellow man.

"Guide my automobile for the protection of others. And may I not miss, because of the love of speed, the beauty of the world which Thou hast created. May I always drive courteously, safely and with a full sense of the responsibility which lies in my hands. Amen."

COUNTY AUXILIARIES

Dubuque

At a meeting on September 15, Mrs. J. W. Moberly and Mrs. Elvin Olin, co-chairmen, reported to the Dubuque County Medical Auxiliary on plans for the handicapped crafts sale at Roshek's, September 28-30, and Mrs. R. H. Lee and Mrs. R. T. Melgaard, the co-chairmen for the Mardi Gras Ball to be held on February 27 named chairmen for the dance committees.

Polk

The Board of the Polk County Auxiliary met on September 16 at the home of the president, Mrs. Louis Goldberg, to complete plans for the year's activities.

Pottawattamie

The Board of the Pottawattamie County Auxiliary met on September 4 to appoint committees and plan the program and activities for the year.

FALL BOARD MEETING

The Fall Board Meeting of the State Auxiliary has been rescheduled for Tuesday, October 27, at the State Medical Society's office building in Des Moines. Members of the State Board of Directors

are urged to attend. Notices will be mailed early in October.

HANDICAPPED CRAFT SALES

As this is written, Handicapped Craft Sales for this fall have been scheduled as follows: Spencer (Clay County Fair), September 14-19; Dubuque, September 28-30; Des Moines, October 19-24; Sioux City, November 5-7. The balance of the sales scheduled will be held in the spring.

These sales are sponsored jointly by the Iowa Society for Crippled Children and Adults and the Woman's Auxiliary to the Iowa State Medical Society. The former handles collection and shipment of the merchandise to the sale sites, and the Auxiliary handles the sales themselves, arranging for the sale location and for the voluntary sales personnel.

APPROVAL REFUSED TO NEW PUBLICATION

On the advice of its Advisory Committee, the Board of Directors of the National Auxiliary has declined either to support or to make a membership list available to the staff of a new popular-reading type of magazine, THE DOCTOR'S WIFE. The first issue was due to appear on newsstands in September, and the Auxiliary was approached for help in circulation promotion.

If county Auxiliaries are approached for endorsement or support of this venture, they are asked to adhere to the National Auxiliary's policy. Requests for additional information on this matter should be addressed to Mrs. E. A. Larsen, Centerville.

HOMEMAKING SERVICES

The Auxiliary to the American Medical Association is urging local groups to take an interest in Homemaking Services, a project of providing housekeeping assistance to families that are passing through a difficult period such as a mother's illness. Medical Auxiliaries in some states have participated actively in setting up agencies to do that kind of work. The organizations, obviously, must be closely associated with other welfare agencies.

The office of the State Auxiliary has some information regarding this type of program for anyone who wishes it.

WOMAN'S AUXILIARY TO THE IOWA STATE MEDICAL SOCIETY

President—Mrs. E. A. Larsen, 323 Oak Street, Centerville
President-Elect—Mrs. R. F. Nielsen, 919 Washington Street, Cedar Falls
Secretary—Mrs. L. F. Henderson, 304 Seerley Street, Cedar Falls

Treasurer—Mrs. J. H. Matheson, 4321 California Drive, Des Moines 12
Editor of THE NEWS—Mrs. H. C. Merillat, 116 Lincoln Place Drive, Des Moines 12

THE DOCTOR'S BUSINESS

How Much Fidelity Bond?

HOWARD D. BAKER

WATERLOO



Even with the most trustworthy employees and under an ideal system of internal control, employee dishonesty can and does occur. With a system that is any less than ideal, an employer may in fact be encouraging such dishonesty.

It is a time-worn fact that embezzlements occur in places and at times where and when they are least expected. The Fidelity and Deposit Insurance Company estimates losses from employee dishonesty at \$500,000,000 annually. Thefts range from insignificant amounts up to thousands of dollars, and occasionally reach a sum adequate to bring about the complete financial ruin of an employer.

Besides providing decent working conditions, reasonable hours, adequate wages and opportunities for advancement, employers have a moral obligation to safeguard their employees' integrity by providing them no temptation to embezzle or steal, and by protecting them from suspicion when accounts fail to balance. No system of accounting or internal control has yet been devised that will absolutely guarantee against dishonesty, yet much can be done to keep an inherently honest employee from yielding to temptation in a moment of weakness, or under the distress of financial difficulties.

AN INTERNAL-CONTROL CHECKLIST

Following are some important ingredients of an adequate internal control system. If at least some of these measures have no counterparts in your office routine, you should discuss them with your management consultant or accountant.

1. Is the mail opened by a trusted employee *other than* your bookkeeper or cashier?
2. Does that person prepare a list of receipts, classified as checks, cash or money orders, and compare it regularly with the daybook?
3. Are receipts issued for all monies received, and are all unused receipts accounted for? The receipts should be numbered serially.
4. Is cash reconciled or balanced daily, and are the figures checked by someone other than the person responsible for the reconciliation?
5. Is *all* of the cash deposited daily, and responsibility for making the deposit fixed upon one person?
6. Are all overages and shortages reported promptly?

7. Cash withdrawals of any type are dangerous and should not be made. If such action is taken, a voucher showing the amount and date should be signed by the person receiving the funds.

8. Is cash physically safeguarded to prevent a dishonest employee's blaming "outside theft" in case of a shortage?

9. Are the daybook, the accounts receivable and the patient case histories spot-checked periodically for discrepancies and irregularities?

10. Are all employees handling cash receipts covered by fidelity bonds?

THE AMOUNT OF THE BOND

These and other safeguards can be instituted, but they won't guarantee absolute protection. Coverage by fidelity bond, in itself, deters theft or embezzlement, since it makes the offense somewhat more serious and riskier.

How large should the fidelity bond be? After considering the matter thoroughly, we feel that the following simple formula for determining risk is valid and can be used for dental and medical employees:

1. 10% of annual gross receipts \$——
2. 10% of current assets (cash on hand, bank accounts, securities and drug and supply inventories) \$——

Risk exposure is the total of the above \$——

The amount of insurance carried is then determined by the Risk Exposure:

Risk Exposure	Insurance
Up to \$25,000	Equal to exposure
\$ 25,000 to \$125,000	\$25,000 to \$ 50,000
\$125,000 to \$250,000	\$25,000 to \$ 75,000
\$250,000 to \$500,000	\$75,000 to \$100,000

Remember that no one is immune to employee dishonesty. Your only assurance of maximum protection is a system of internal control, plus the bonding of each employee who has access to funds or valuable properties in your office.

Medicine in the Union of South Africa

JOSEPH A. BUCKWALTER, M.D.

IOWA CITY

WITH THE END of the Anglo-Boer War, in 1902, the Act of Union joined the theretofore separate provinces of the Transvaal and Orange Free State (settled primarily by the Boers or Afrikaans people), Natal Province (settled almost exclusively by the British) and the Cape Colony (settled by both British and Boers). The Union of South Africa became a self-governing dominion within the British Commonwealth of Nations. As a compromise between the British and Afrikaans segments of the white population, the executive function of the government was to be conducted in Pretoria, and the legislative in Capetown, more than 1,000 miles to the south. This inefficient arrangement necessitating a multimillion-dollar migration of

civil servants and politicians twice yearly, continues to this day. It is the intent of the Nationalist Party, composed chiefly of Afrikaaners and now in power, to make the Union into a republic independent of the British Commonwealth. It is doubtful that the Union can afford this degree of anglo-phobism.

GEOGRAPHY AND ECONOMICS

Occupying a land area one-third that of the United States on the southern tip of Africa (Figure 1), the Union has a temperate to semi-tropical climate. The latter, coupled with fertile soil and heavy rainfall in the coastal areas, produces an abundant agriculture. All kinds of citrus and other fruits, vegetables, sugar cane and grains are produced easily in excess of the needs of the present population. In areas where the rainfall is low, such as the high veld in the Transvaal, irrigation quickly transforms the semi-desert into lush orchards and truck farms. Being the major source of the world's diamonds and having rich deposits of gold and uranium ore, South Africa has a sound base for its rapidly expanding industrial economy. Moreover, substantial deposits of bauxite, iron,

Dr. Buckwalter, an associate professor of surgery at the S.U.I. College of Medicine, spent several months last year in South Africa directing a research project concerned with relationships of blood groups to disease, sponsored by the Universities of Iowa and Natal, and financed in part by the USPHS under grant A-1860. This manuscript was reviewed, and the factual content was corrected and added to by Dr. A. E. Kark, professor and head of surgery at the University of Natal, Durban, Union of South Africa, and by Dr. J. T. Hayward-Butt, formerly senior lecturer and clinical tutor in anesthesiology at the University of Natal, and now a visiting assistant professor of anesthesiology at S.U.I. The opinions and interpretations contained in the paper are those of the author, and not necessarily are concurred in by the reviewers.



Figure 1

copper and petroleum remain untapped. Mountains, long reaches of white, sandy beaches, unpopulated and unspoiled rugged semi-desert, and jungle country rich with big and small game provide inexhaustible opportunities for the traveler. The Union of South Africa is the wealthiest and the only industrialized country on the African continent, and the only one that is run by the Caucasian race.

Telephone and telegraph systems, radio and well-paved highway networks comparing favorably with those of the United States, railroads and airlines, oil refineries, automobile assembly plants, thriving heavy industry, the large-scale gold and uranium mining and refining operations, fully modern cities such as Johannesburg, Capetown, Durban, East London, Bloemfontein and Pretoria (Figure 1) equipped with sewage disposal and water purification plants, public transportation, school systems, department and other stores, hotels, apartment houses and modern residences—all comparing favorably with their counterparts in the United States—are striking testimony to the extraordinary achievements of the past 50 years.

THE RACE PROBLEM

But any description of this wealthy, beautiful country, if one is to take any cognizance of current events, must include a discussion of racial interrelationships and tensions that hang as an ominous cloud over the South African scene. The white and black races arrived in South Africa at about the same time, the former settling first in the Cape area, and the latter migrating into South Africa from the north. For this reason, the descendants of the original Boer and British white settlers argue today that South Africa belongs to them just as much as to the Bantus or "natives." The Boers, who were the forebears of the Afrikaaners of today, "trekked" or migrated to the north to escape British liberal policies and because of a strong fondness for independence. In the hinterlands, both the Boers and the British, independently, met strong Bantu tribes and after 50 years of sporadic and savage warfare conquered them.

In the north, in the area which is the Orange Free State and the Transvaal today, the Boers opened up vast areas for farming. The British, particularly after 1890 when gold was discovered, introduced and developed banking, insurance, railroads, other forms of transport and industries. Today, farming continues to be the main concern of the Afrikaans people, whereas three-quarters of the modern industrial economy of the country is controlled and run by South Africans of British extraction. The Bantus, with all their political and martial power broken, have lived in "reserves" (13 per cent of the area of the country) under primitive tribal conditions. The Bantu men, and more recently the women, have provided an enor-



Figure 2. Groote Schuur Hospital, Capetown.

mous source of cheap migratory labor. Because of the almost insatiable demand for unskilled, cheap labor by the expanding industrial economy, the 3,000,000 to 4,000,000 Bantus who have migrated to live in and around the cities and towns in slums are the backbone of the nation's labor force. These superficially Westernized, almost detribalized but still largely illiterate people have a vital role in the tragedy of modern South Africa. Although both black and white have contributed to the development of the country, the whites doing the exploration and providing leadership and know-how, and the blacks providing sweat and toil, only the whites have as yet reaped rich rewards, since modern South Africa is built upon the concept of the supremacy of the white race.

Anyone other than the very short-time visitor to the Union quickly becomes aware of the tragic failure to solve the problems that have resulted from several races' living together in South Africa. This failure is reflected in every facet of South African life. In the Union, as has been true in all of Africa south of the Sahara, everyone is, for the purposes of human relationships, either "European" (i.e., Caucasian but not necessarily European by birth or even by visitation) or "non-European" (i.e., non-Caucasian and with pigmented skin). In the Union of South Africa there are just less than 3,000,000 "Europeans," and about 11,000,000 "non-Europeans" of whom 9,500,000 are Bantus, 1,000,000 are "coloureds" (half-castes) and 500,000 are Asiatics (Indians).

Apartheid, the official government policy, may be defined as equal opportunity for the completely separated and segregated races. At its best, *Apartheid* means that in the distant, non-foreseeable future, the South African "non-Europeans" may have educational, economic, cultural and social opportunities in their own areas. The reserves cover only 13 per cent of the country's area, and already one-third of the Bantus are living in white cities and are testing Western ways of living. In

"European" or white areas, however advanced the Bantu or "native" may be, he is allowed no rights or political opportunity. At its worst, *Apartheid* is just another way of saying that the government is committed at all costs to the maintenance of white supremacy and black subjugation.

Against this background, I propose to describe South African medicine as I saw it.

MEDICAL EDUCATION

Of the five medical schools, the two oldest are the Universities of Cape Town, at Capetown, and Witwatersrand, at Johannesburg in the Transvaal. For practical purposes, financial support for all medical schools other than relatively modest tuition fees comes from the national government. The few private funds and grants available supplement government research grants, but are neither numerous nor large enough to help support medical education. Curricula, faculty appointments and responsibilities at the medical schools are similar to those in Britain. The members of the faculties of the five medical schools are "Europeans," few qualified "non-Europeans" being as yet available. Most of them have received their training in Great Britain, some in the Union, and fewer in the United States, Germany, Holland, France and other countries.

The first three years of medical training are devoted to pre-clinical work, and the last three to clinical studies. Competition for admission to medical schools is keen, the number of applicants exceeding the number of places to be filled by two-fold. Few scholarships are available. The yearly cost of medical education including living, tuition, books and incidentals is about \$1,200. A small quota (eight to 10) "non-European" students are included among the 160-odd students admitted yearly to the Universities of Cape Town and Witwatersrand. In March, 1957, legislation referred to as the Separate University Education Bill was introduced in Parliament. If this Bill

becomes law (it has now been passed) not only will these two schools be closed to all except "European" students, but also the academic freedom of the faculties will be seriously curtailed. The opposition, led by the university faculties, has thus far been successful in thwarting the enactment of this bill, a fact which indicates that substantial numbers of the electorate are alert to the ominous implications which an infringement of academic freedoms will have upon the basic democratic principles of the Union.

Teaching material is provided by university-like hospitals, which are administered by provincial (state) authority. At the University of Cape Town, the Groote Schuur (Figure 2), and the Children's Red Cross Hospitals (Figure 3), and at the university of Witwatersrand, the Johannesburg General and Baragwanath Hospitals supply an abundance of "European" and "non-European" clinical material. Each major department of the medical school is headed by a full-time professor, who receives a salary provided half by the national government and half by the provincial authority and totaling about \$11,000 to \$12,000 per year. Income in some of the universities may be supplemented by private practice, and the privilege is now being extended to include the other universities. The South African cost of living is about two-thirds that of the United States.

Much of the teaching is done by part-time faculty members, although there are in most departments two or three additional moderately well-paid full-time staff members. Part-time teachers receive negligible stipends for their teaching contributions, but are well supported by flourishing private practices. Faculty appointments and salaries are the same at all five of the medical schools.

Pretoria University medical school, which has been in operation 12 years, and the Stellenbosch University medical school, in operation two years, are Afrikaans institutions, where Afrikaans rather than English is the official spoken and written language. English textbooks are used. A large percentage of the faculty members are Afrikaaners who, like their counterparts at Cape Town and Witwatersrand, have had their training in the United Kingdom, in the Union of South Africa, or less often in the United States, Germany, Holland, etc. No "non-European" students are admitted. Medical students are almost exclusively Afrikaaners, whereas at the other schools the predominant British stock is diluted with Afrikaaners.

The first class was admitted to the fifth medical school, at the University of Natal, in 1952 (Figure 4). It is located in Durban, and was established for the purpose of training *only* "non-European" students. The University of Natal, third largest in the country, admits students of all races, but when the medical faculty was founded in 1952, the government established a policy of admitting no Caucasians. Africans, "coloureds" and Indians



Figure 3. Children's Red Cross Hospital, Capetown.



Figure 4. University of Natal Medical School, Durban.

from the Union, from the British protectorates of Basutoland and Swaziland, from Rhodesia, Kenya, etc., may be admitted. The medical school staff, after initial vigorous opposition, has reluctantly accepted this restriction, feeling that it is better to let medical education get started for non-whites than to delay it. The very limited non-segregated program permitted at the two white schools (the Universities of Cape Town and Witwatersrand) is totally inadequate for meeting the needs for the medical education of "non-Europeans."

The government plans that doctors qualified by the University of Natal will provide medical care for Bantu and Asiatic (Indian) people living on reserves and in "non-European" housing areas, consistent with the policy of *Apartheid*. Economically, culturally and socially, such practice is unattractive as compared with opportunities present in the cities. Reluctance on the part of the Bantu and Indian graduates to go along with these plans is already evident.

The medical school organization at the University of Natal is similar to that at the other four already described. Teaching material is provided by the 2,000-bed King Edward VIII "non-European" hospital (Figure 5), and the McCord Mission Hospital of about 300 beds. Since all the medical students are "non-Europeans," there is no need for white patients.

Following qualification, the new physicians serve as housemen (internes in a hospital) for one year. Then, if one of these doctors decides to specialize, he applies for a registrarship (residency) in the particular specialty. Until about two years ago, it was necessary for the registrar who was a candidate for a higher degree or qualification in a specialty to go abroad, most often to Great Britain, to complete training for his fellowship (the equivalent of a diploma from an American specialty board), but fellowship examinations for surgeons, gynecologists and internists are now being given in the Union.

PRIVATE PATIENT MEDICINE

After the one year as a houseman, the newly-qualified doctor may go into private general prac-

tice. There is no voluntary or involuntary private-practice medical scheme in the Union of South Africa. Private practice is conducted very much as it is in the United States. The physician maintains an office, charges fees and hospitalizes his patients in private nursing homes (Figure 6) or in one of the few private hospitals (Figure 7) in the Union. Approximately 50 per cent of the white population belong to medical benefit schemes which pay as high as 75 per cent of the hospital costs and physicians' fees. These programs function very much like Blue Cross and Blue Shield. Fees are relatively high in the Union of South Africa—office calls \$3; house calls \$5; appendectomy \$150; cholecystectomy \$250. Physicians therefore are favorably situated economically and socially. This factor reduces the number and caliber of physicians interested in academic medicine, with its relatively poor economic return. The qualified specialist also practices very much as he would in the United States. Almost all private surgery is performed in private nursing homes, which rarely have a house staff. Private hospital charges are about one-half of those in the United States, chiefly because of the abundance of cheap Bantu labor.

DISCIPLINE AND ETHICS

All physicians must be listed in the Medical Directory, over which a Medical Council has legal jurisdiction. The Council has 24 members, including doctors, hospital administrators, the deans of the five medical faculties, dentists and nurses, and government nominees appointed by the Minister of Health; from that number there is an executive committee of nine. Complaints concerned with the ethics of medical practice coming from colleagues or from patients and having to do with fee irregularities or malpractice are brought to the Medical Council. Cases are tried by the Council according to established legal procedures. Plaintiffs and defendants are represented by attorneys. The decision of the Medical Council is legally binding, and the defendant may be deprived of the



Figure 5. King Edward VIII Hospital, Durban.

right to practice medicine, may be required to face criminal prosecution or may be acquitted. In addition, all criminal charges heard in courts are automatically forwarded to the Council for appropriate action. Whatever the outcome, being brought before the Medical Council is a stigma that is a distinct handicap for the involved physician to overcome.

There is also a Federal Council consisting of elected delegates from all local associations. This body deals with contract practice, fees and benefit societies. In other words, it is the "trade union executive" of the profession.

General practitioners frequently form groups or partnerships. It is regarded as unethical for specialists of different sorts to practice with one another or with general practitioners, however, such practices being regarded as "dichotomy" or fee-splitting.

Another difference between the medical ethics of the Union of South Africa and of the United States is in the attitude of the medical profession toward the lay press. The medical profession in South Africa forbids the appearance of a physician's name in the lay press unless the individual is in full-time hospital practice. This regulation includes a ban on the reporting of medical meetings. The resultant lack of cooperation and many times open hostility act to the disadvantage of the press, the medical profession and the lay population.



Figure 6. Primrose Nursing Home, Capetown.



Figure 7. Volks Hospital, Capetown.

INDIGENT PATIENT MEDICINE

Facilities are provided by the national and provincial governments for the care of indigent "European" and "non-European" patients. Consistent with *Apartheid*, however, these facilities are always completely separated, and in most instances those for white patients are superior. The Groote Schuur Hospital is an exception to the latter generalization. Identical completely separated wards are provided for indigent "European" and "non-European" patients. Operating room and other facilities do not differ. Nursing care is provided for the "Europeans" by Caucasian nurses, and for "non-Europeans" by non-Caucasian nurses. In contrast, at the University of Pretoria medical school, the multimillion-dollar unit for the care and study of cancer which has just been completed is for the care and treatment of "European" patients only. "Non-Europeans" in Pretoria who require supra voltage, low voltage x-ray or radioisotope therapy are not admitted to this well equipped and staffed unit, but must be transported to the much less impressive and adequate "non-European" Baragwanath Hospital, in Johannesburg 40 miles away. In Durban, the Addington Hospital—500 beds, supported by city and Natal Province funds—provides care for indigent "Europeans." A very few private beds are available. The staff is composed of private practitioners in the city of Durban, which has a population of about 500,000 (160,000 "Europeans"; 170,000 Bantus; 170,000 Indians). The hospital facilities for "non-Europeans" in the Durban area are the King Edward VIII (the teaching hospital of the University), the King George V (tuberculosis) and the McCord Mission Hospitals. The latter was founded



A.



B.

Figure 8

A. Asiatic (Indian) produce stand—Durban environs.

B. Cato Manor (native housing)—Durban edge.

C, D. Bantu and Indian patients at King Edward VIII hospital

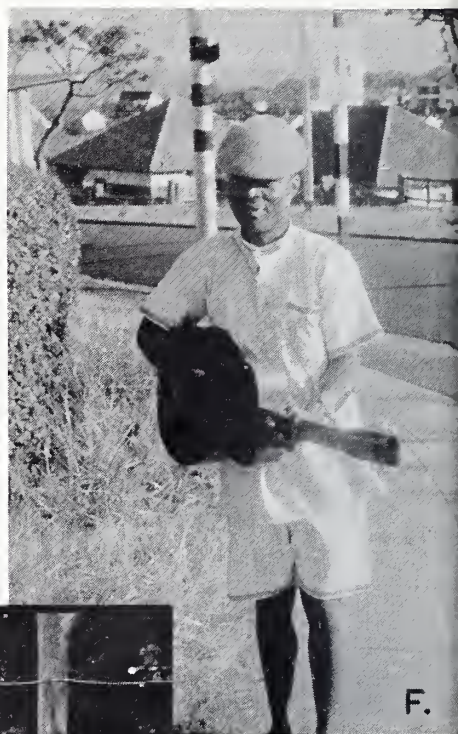
E, F, G. Bantu, Durban.



C.



E.



F.



D.



about 50 years ago by Dr. McCord, a Presbyterian missionary from Minnesota. Today, Dr. Taylor—McCord's early assistant, born in Iowa and graduated from the University of Minnesota Medical School—is chief surgeon, obstetrician, pediatrician, internist and administrator, and chief fund-raiser as well. He provides the driving force for this modern 300-bed general hospital serving Bantus and Indians. At Pietermaritzburg, the capital of the province and 50 miles from Durban, is Edendale Hospital (a 700-bed general hospital for "non-Europeans") and Town Hill and Fort Napier Hospitals (2,500 beds for "non-European" psychiatric patients).

About three-quarters of the "native" or Bantu population in the Union of South Africa live in the reserves. These relatively fertile areas a hundred miles or so from the cities are undeveloped and farmed by primitive methods. Living conditions are likewise primitive. Hospitals and clinics provided by the national government are poorly equipped, and they are inadequately staffed by poorly-paid government physicians. For the past 100 years, the bulk of medical care for "natives" in the reserves has been provided by the many mission hospitals containing between 10 and 400 beds each, some well-equipped and some poorly. As has been indicated, it is the government's plan that the graduates from the University of Natal medical school will help to correct these inadequacies.

EPILOGUE

The national and provincial governments have spent and are spending large sums to meet the medical needs of the "non-European" community. A large contribution has been made by the Catholic, Anglican, Methodist, Swedish and other church groups in the form of mission hospitals. It is to be remembered that all the tax and other support for medical care of the "non-Europeans" comes from "European" pockets. Another example of the "white man's" contributions to the Bantus' health is illustrated by the following: At the King Edward VIII Hospital, in Durban, large amounts of whole blood are required to facilitate the massive surgery necessitated by lesions that are worse than they might have been if doctors had seen them earlier. The blood is contributed by voluntary donors—all of them whites. The Bantus and the Indians don't yet consider it their responsibility to provide blood for their relatives. Education is slowly overcoming this mistaken attitude.

The provisions that have been made for the health care of "non-Europeans" in the Union of South Africa reflect the paternalism that pervades all facets of life in that country. Usually not so benevolent, this paternalism is based upon the concept of white supremacy, perpetuated and exaggerated by *Apartheid*, and second-class citizenship for the "non-European." At present, the over-

whelming economic, political and police power of the government renders ineffectual the protests of "non-Europeans" and of the small group of "European" liberals who stand for racial equality. However, it is admitted even by the strongest advocates of white supremacy that *Apartheid* is only a stop-gap and that the seed of black nationalism which is growing vigorously elsewhere in Africa is already present in the Union and will, in spite of all efforts, ultimately take root and grow within the Union. The hope for the future lies in the white man's recognizing the black man's capacity for education and for assuming the responsibilities that go with first-class citizenship. The white man, then, must be prepared to make some very real social, economic and political adjustments.

Today, there is little indication that the white man is prepared to take the first step of recognizing the black man as his potential equal. Will he come to that recognition soon enough to avoid being engulfed in social and economic turmoil, and in the bloodshed which otherwise seems inevitable?

IODINE INSTEAD OF CHLORINE FOR SWIMMING POOLS

Iodine has proved more effective than chlorine when used as a disinfectant for swimming pool water, according to a study conducted by scientists associated with the College of Engineering at the University of Florida.* Eight pools varying in size from the Olympic-dimensioned one at that institution to small home-type pools at three motels were utilized in a six-months study. Bacteriological and chemical tests to determine efficacy and residue of chlorine and iodine confirmed this finding.

During the period when chlorine was being added, the water of all the pools exhibited the familiar odor and taste associated with that element. However, in the iodine-treated pools "no perceptible odor or taste was present in the water of any pool," the investigators said. No complaints of eye irritation were received from bathers. Another advantage of iodine over chlorine is that it is easier to approximate the average iodine demand of swimming pools, since it is much less dependent on the bathing load than is the chlorine demand.

"These studies appear to indicate that a daily dosage of one part per million of potassium iodide would be sufficient under most conditions for use in home pools, and perhaps double that figure for more heavily used public pools," the authors concluded.

* Black, A. P., Lackey, J. B., and Lackey, E. W.: Effectiveness of iodine for disinfection of swimming pool water. *AM. J. PUB. HEALTH*, 49:1060ff., (Aug.) 1959.

Midwest Cardiac Conference

Iowa City, November 19-21

Thursday Afternoon

- 1:30 p.m. "Recent Advances in Knowledge of the Etiology of Essential Hypertension"—William R. Wilson, M.D.
- 1:45 "Diagnosis of 'Renal' and 'Secondary' Hypertension"—Mark L. Armstrong, M.D.
- 2:00 "Effect of Blood Pressure Lowering on Morbidity in Hypertensive Patients"—Walter M. Kirkendall, M.D.
- 2:15 DISCUSSION: Epidemiology, Cause and Rationale of Treatment of Hypertensive Disease—John H. Moyer, M.D., chairman of the Department of Internal Medicine at Hahnemann Medical College, Philadelphia, Raymond Gifford, M.D., consultant in the Section of Medicine, Mayo Clinic, and Drs. Wilson and Kirkendall
- 3:15 "The Treatment of Patients With Mild Hypertension"—Dr. Gifford
- 3:45 "Development of Effective Treatment Plan for Patients With Severe Hypertension"—Dr. Moyer
- 4:15 DISCUSSION: Treatment of Hypertension—Drs. Armstrong, Wilson, Moyer and Gifford
(a) Short case presentations
(b) Questions from the floor

Friday, November 20

- 9:00 a.m. "The Veins and Congestive Failure"—John W. Eckstein, M.D.
- 9:15 "Diuretics in Management of Congestive Failure"—Dr. Moyer
- 9:30 "The Endocrines and Congestive Failure"—Frederick C. Bartter, M.D., chief of the Section on Endocrinology, National Heart Institute, Bethesda, Maryland
- 10:00 DISCUSSION: Treatment of Heart Failure, Especially Sodium Restriction—Drs. Eckstein, Moyer and Bartter
- 11:00 "Management of Heart Disease in the First Two Years of Life"—Jacqueline Noonan, M.D.
- 11:30 "Obscure Causes of Heart Failure"—E. O. Theilen, M.D.
- 12:00 m. "Recent Advances in Electrocardiography"—L. E. January, M.D.
- 1:45 p.m. "Control of Aldosterone Secretion"—Dr. Bartter
- 2:15 "Diagnosis and Treatment of Peripheral Vascular Disease"—Dr. Gifford
- 2:45 "Treatment for Generalized Arteriosclerosis"—William E. Connor, M.D.
- 3:30 "Surgery for Coronary Artery Disease"—C. Walton Lillehi, M.D., professor of surgery at the University of Minnesota

- 4:00 "Review of Surgery for Valvular and Congenital Defects"—Johann L. Ehrenhaft, M.D.
- 4:30 DISCUSSION: (a) Arteriosclerosis and (b) Cardiac Surgery—Drs. Gifford, Connor, Lillehi and Ehrenhaft

Friday Evening

(Roundtables each limited to 10 registrants)

1. PULMONARY DISEASE AND COR PULMONALE—George N. Bedell, M.D., Paul M. Seeböhm, M.D., and Dr. Wilson.
2. ARTERIOSCLEROSIS AND PERIPHERAL VASCULAR DISEASE—Robert C. Hardin, M.D., John Hoak, M.D., and Drs. Connor and Gifford.
3. CARDIAC SURGERY—Dr. Ehrenhaft, M. S. Lawrence, M.D., and Drs. Lillehi and Noonan.
4. ARRHYTHMIAS AND HEART SOUNDS—William B. Bean, M.D., June Fisher, M.D., Victor A. McKusick, M.D., and Dr. Theilen.
5. HYPERTENSION AND RENAL DISEASE—Dr. Kirkendall, R. Smith, M.D., Wallace W. McCrory, M.D., and Dr. Moyer.
6. CORONARY ARTERY DISEASE—Dr. January, Raymond F. Sheets, M.D., and Dr. Armstrong.
7. HEART FAILURE—Elmer L. DeGowin, M.D., A. W. Horsley, M.D., and Dr. Eckstein.
8. ENDOCRINES AND VASCULAR DISEASE—Henry E. Hamilton, M.D., Daniel B. Stone, M.D., Harold Schedl, M.D., and Richard E. Peterson, M.D.

Saturday Morning

- 9:00 a.m. "Practical Physics of Auscultation"—Victor A. McKusick, M.D., associate professor of medicine, Johns Hopkins Medical School
- 9:30 "Introduction to Auscultation Clinic"—Drs. January and Theilen

Saturday Afternoon

- 1:30 p.m. Iowa—Notre Dame Football Game

Attend the

AMA CLINICAL MEETING

Dallas

December 1-4



Scientific Articles

Role of the Family Physician in the Treatment of Children With Congenital Heart Disease

PATRICK A. ONGLEY, M.B., B.Ch.

ROCHESTER, MINNESOTA

THE CARE OF patients who have congenital heart disease is largely a matter of teamwork, the team being composed of (1) the family physician, (2) the pediatric cardiologist, (3) the cardiovascular physiologist and (4) the cardiovascular surgeon. Each of these persons will be involved to a greater or lesser degree, depending upon the nature, complexity, seriousness and operability of the patient's anomaly.

In a subject as complex as that of congenital heart disease, it is surprising how much the patient's welfare depends upon a good relationship between physician and patient and upon old-fashioned good clinical practice.

It is my intention to discuss from a general and a practical point of view the specific areas of interest belonging to the family physician in the care of children who have congenital heart disease. This presentation will not include a detailed discussion of the differential diagnosis of congenital cardiac lesions, nor will it delve into electrocardiography.

DIAGNOSTIC ASPECTS

Almost every writer or teacher dealing with clinical diagnosis stresses the necessity for a detailed history, a thorough physical examination and a high index of suspicion. Although this approach is desirable, a few pointers should be given to stress medicine's past deficiencies and to improve physicians' habits in the future.

Auscultation. All physicians are aware of the necessity for listening carefully to the heart at the apex, at the lower left sternal border, and in

the pulmonic and aortic areas, but they don't do it routinely, or if they do, they merely place the stethoscope on these areas without really thinking about what they are hearing. The poor auscultatory habits of the great majority of physicians arise from the fact that they are often in doubt about how to interpret what they hear, and thus they tend to lose interest in auscultation.

Several points in auscultation should be stressed. The physician should provide himself with the best possible stethoscope—one that has both a bell and a diaphragm. He should listen for one sound at a time. For example, he should study the first sound at the apex and at the lower left sternal border and decide whether it is normal, accentuated or diminished. He then should listen at the base of the heart for the second sound and should try to decide whether it is normally split, whether the splitting is unduly wide, or whether perhaps only one sound is present. Likewise, he should try to decide whether the aortic and the pulmonic sounds are normal, accentuated or diminished. It means nothing to say that the pulmonic second sound is greater than the aortic second sound unless one says why; thus, he should ascertain whether A_2 is normal and P_2 accentuated; whether A_2 is diminished and P_2 normal; or whether they both are of normal intensity. Each of these points obviously has an individual clinical significance. After listening for the first and second sounds, the physician should ascertain whether any third or fourth sounds are present, or whether other sounds, such as ejection clicks, can be noted.

Not until he has decided on the foregoing points should he start listening for murmurs. Apical diastolic rumbles are of low frequency, and there-

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fore the stethoscopic bell, which records low frequencies, should be used in listening for them. Aortic diastolic and pulmonic diastolic murmurs are of higher frequencies, and the diaphragm should be used to detect these. Because of the similar frequencies of basal diastolic murmurs and the breath sounds, it is important to have the patient stop breathing during this part of the auscultatory process. This may be accomplished in small children by pinching their nostrils for a few seconds. When one is listening for the murmurs of mitral insufficiency or for aortic or pulmonic systolic murmurs, both the bell and the diaphragm are helpful.

Tetralogy of Fallot. It is not unusual for cyanotic patients receiving digitalis to be referred with the correct diagnosis of tetralogy of Fallot and with a history stating that administration of the drug was instituted because the patient had cardiac decompensation. With few exceptions, however, patients who have the tetralogy of Fallot do not experience cardiac failure. When the right ventricular pressure increases and exceeds the left ventricular and aortic pressures, blood shunts from the right ventricle across into the aorta. Therefore, the right ventricular pressure does not reach the levels that will precipitate cardiac failure.

Murmurs Present at Birth. A systolic murmur noted at birth and after the first few days of life most likely is caused by aortic stenosis, or by pulmonic stenosis either as an isolated lesion or within the framework of the tetralogy of Fallot. The murmurs of ventricular septal defect usually are heard better after a few weeks, and the murmurs of atrial septal defect may not be impressive until several years have passed. Continuous murmurs occasionally are heard in the first few days of life, and may be caused by venous hum or a truncus arteriosus. On rare occasions they result from a patent ductus arteriosus, the continuous murmur of which usually is not noted until after the first few months of life. Apical diastolic murmurs are common in congenital heart disease and usually result from increased flow through the mitral valve associated with large left-to-right shunts at the level of the ventricle or the ductus. They rarely represent mitral valvular disease.

Left-to-Right Shunts. Children who fail to thrive can present some of the most discouraging diagnostic problems because of the large number of possible causes for their condition. One should consider congenital heart disease with a large left-to-right shunt as one of the possible explanations in such cases.

Femoral Pulses. Femoral pulses should be palpated in all patients, but a moment's reflection soon makes one appreciate how often this procedure is omitted. Some physicians attempt to feel the femoral pulsations only if the blood pressure in the upper extremities is increased, but in the presence of a left-to-right shunt proximal to an aortic coarctation, it may be impossible for the heart to develop high pressure in either the left

ventricle or the proximal part of the aorta, and thus no great increase of pressure will be detected in the arms.

CONGESTIVE CARDIAC DECOMPENSATION IN CHILDREN

During medical school, students tend to develop a mental picture of congestive cardiac decompensation that usually consists of an elderly dyspneic patient with swollen ankles and a history of rheumatic heart disease, coronary arterial disease or hypertension. A different picture is seen in children with heart failure. Many such children, because of their long-standing disease, tend to be scrawny, unhappy and miserable persons, with a tendency to perspire freely—especially about the head. The diagnosis of a failing heart in these children is often missed because they may be extremely resistant to examination and also because physicians are not always aware of the possible etiologic factors. Whenever the presence of congestive cardiac failure is suspected in a child, one must feel carefully for the liver, since this is a far better index of decompensation in children than is the presence of rales or of distention of the veins in the neck. Thoracic roentgenograms should be made in all instances of suspected congenital heart disease. After a little roentgenologic experience, one finds it easy enough to estimate or measure the size of the heart and to get some idea as to whether the pulmonary vasculature is normal, increased or diminished. In infants or children who have pulmonary congestion, it may be extremely difficult to decide whether the condition represents active congestion, passive congestion, infection or a combination of two or all three of these factors.

USE OF DIGITALIS IN CONGESTIVE CARDIAC DECOMPENSATION

When digitalis is used for the treatment of congestive cardiac decompensation or for cardiac arrhythmias, it is important to remember that each patient constitutes a separate and complete clinical "experiment." General rules can be given for digitalization, and they are necessary, but it is improper to digitalize patients without careful clinical and electrocardiographic control. The reasons for digitalization and the clinical status should be carefully noted in the record. After the clinician has decided which preparation of digitalis he desires to use, he then should write in the record the drug to be used and the approximate dose required for digitalization. Regardless of whether the drug is to be given in two, three or four doses, an electrocardiogram should be taken before the initial dose and again after approximately 75 per cent of the calculated digitalizing dose has been given. In this way, patients who become toxic on less than the calculated dose can be detected, and the last portion of the calculated dose can be withheld. Other factors such as undue slowing or irregularity of the pulse may necessitate earlier electrocardiographic checks.

The electrocardiogram does not tell us when the

correct amount of digitalis has been given. It may show that some has been administered or that too much has been given, but clinical appraisal is the only means we have for determining when the correct amount has been administered. Mild to moderate sagging of the ST segment, lowering of the T waves, shortening of the QT interval and slight prolongation of the PR interval are simply evidence that the patient has received digitalis, not that he is digitalized. These changes are not a contraindication to additional doses if the desired clinical effect has not been achieved. It is not until signs of toxicity appear, as evidenced by various degrees of heart block, supraventricular tachycardia, vomiting and, less frequently in children, ventricular ectopic beats, that the physician is made aware that a safe dose has been exceeded.

The oral preparation of digitalis used almost exclusively by my colleagues and me in the Section of Pediatrics at the Mayo Clinic is the pediatric solution of digoxin prepared commercially as a dilute solution containing 0.05 mg. per milliliter. Our guidepost is an estimated digitalizing dose of 1.6 mg. per square meter of body surface. Approximately 1 mg. of a parenteral preparation per square meter is used for intravenous or intramuscular use. The oral digitalizing dose usually is given in three divided doses. One-half of the calculated digitalizing dose is given initially, and one-quarter of the dose is given 6 to 8 hours later. Then, after another 6 to 8 hours and after a check electrocardiogram to make certain that toxicity has not developed, the final dose is given. The daily maintenance dose varies between a fifth and a third of the digitalizing dose, and it usually is administered in two divided doses. In emergency situations, three-quarters to five-sixths of the digitalizing dose is given intravenously, and an electrocardiogram is taken 30 minutes later before the final dose is given.

I should like to stress once again that these are general rules and that each patient must be treated individually. Many patients suffering from congestive cardiac failure are inadequately digitalized. Many times, the doses given are little better than homeopathic, and although the physician may feel better for having prescribed digitalis in such quantities, it is doubtful that the patient always benefits from having received it.

ANOXIC "SPELLS" IN CONGENITAL HEART DISEASE

Small children who have severe congenital heart disease with cyanosis are subject to symptoms resulting from cerebral anoxia. For want of a better name, these symptom complexes are known as anoxic "spells." They vary in severity. They may be noted as attacks of increased cyanosis together with pronounced irritability, or they may progress to partial or complete loss of consciousness. They are precipitated by mild or moderate exertion, such as straining at stool, by ingestion of a large meal or by an emotional upset. They may occur at specific times, such as early in the morning on awakening, or their appearance may be unpredict-

able. They may be frequent, occurring several times a day and lasting a few minutes to several hours, or they may be extremely rare.

Since the cause apparently is an increase in the degree of right-to-left shunting and poor cerebral arterial oxygenation, it is imperative to direct one's therapeutic efforts toward counteracting this trend. With the onset of an attack, the child should be placed or nursed with the legs flexed at the knees and the thighs flexed on the abdomen. If in bed, the child should be placed in a knee-chest position. In this manner, venous return to the right side of the heart is facilitated and peripheral resistance is thought to be increased, thereby diminishing the degree of right-to-left shunting. Increased resistance to flow into the lungs from the right side of the heart is probably the precipitating factor in these spells, but there is no way of attacking this problem directly. Oxygen should be administered, preferably in a tent. Sometimes it may be given by mask when a small infant is being comforted and soothed by the mother. In the early stages of a spell, comforting and rocking by the mother may allay anxiety sufficiently to offset the development of a severe attack.

If the attacks are extremely severe, morphine sulfate in a dose of not more than 1 mg. per 5 Kg. of body weight for an infant may have a dramatic effect in relieving an attack. It is our custom to start with half of this dose. If the time of a severe attack can be anticipated each day, the spell may be prevented by a prophylactic administration of morphine; if the attacks occur frequently but irregularly, either phenobarbital or morphine given round the clock may be beneficial. It is obvious that morphine should not be given more often than is essential.

Many of these children who are cyanotic and polycythemic may have hypochromic anemia, even though the value for hemoglobin may be 14 to 16 Gm./100 ml. of blood. Small transfusions of packed cells of not more than 10 ml./Kg., or the oral or parenteral administration of iron may have a dramatically beneficial symptomatic effect. As the level of hemoglobin increases, the oxygen-carrying capacity is increased, and even though the patient becomes more cyanotic, his symptoms may improve greatly.

BACTERIAL ENDOCARDITIS AS A COMPLICATION OF CONGENITAL HEART DISEASE

Bacterial endocarditis is not a common condition, and more than 90 per cent of the cases occur in patients who have rheumatic heart disease. Almost 5 per cent of cases occur in association with congenital heart disease, and this small percentage could be reduced further by the judicious use of antibiotics when patients with congenital heart disease undergo minor surgical procedures, have dental extractions or suffer from any obvious bacterial infections. As a general rule, patients with congenital heart lesions should be treated more promptly and more vigorously than

are other persons when they contract bacterial infections.

THE ROLE OF THE PHYSICIAN AS COUNSELOR

Many general problems are encountered in congenital heart disease in which the family physician can make a real contribution to the general welfare of the patient and his family.

It is not unusual to meet families in which neither the parents nor the patient has any real conception of the present difficulties or the future outlook. The parents may have acquired a considerable amount of *misinformation*, and frequently they have been told that their child has only six months to live, or will not live beyond the age of two, seven or 12 years, when in actual fact no good reason exists for believing that his difficulties will become insurmountable within any set length of time. The physician, of course, must be honest and frank with the parents, but it is inexcusable for him to have them looking toward some particular birthday with apprehension.

Patients who are old enough to understand their difficulties should be told in a reasonable and general sort of way that they are not quite so fit as are their friends, and for that reason it is necessary for them to restrict their activities. Also, it should be made clear to them, perhaps, why they must take pills each day, and certainly why they must visit their physician periodically. It is wrong to bring a child to the hospital under the pretense that he is going on a holiday trip, or to tell him that he is to have his tonsils out when in fact he is to have a cardiac operation. Children are extremely perceptive, and if one lies to them about such important things as these, one should not be too surprised to find that they are distrustful in the future.

Some parents, through ignorance or fear, or for other more complex reasons, turn asymptomatic or only moderately incapacitated children into cardiac cripples. It is important to teach parents to allow children to live within their own capabilities and not to assume that because they have some form of congenital heart disease they are likely to drop dead. The great majority of patients who die as the direct result of congenital heart disease are those who have severe lesions, and the danger of sudden demise is predictable in many of these patients. Although certain patients with congenital heart disease may suffer from diminished exercise tolerance and may perhaps exhibit signs of mild to moderate congestive heart failure, they are not in danger of sudden death. However, one group of patients who may appear perfectly well and yet die suddenly are those who have severe congenital aortic stenosis.

A long-range plan for patients with congenital heart disease is of the greatest importance. Most of these children are going to live to adult life and may enjoy a relatively normal life span. At an

early age, the interests and activities of these children must be directed into channels that are appropriate to their capabilities. It does not make good sense to encourage participation in competitive athletics in a child who has aortic stenosis, or to allow a patient with endocardial fibroelastosis to become a construction worker.

Many lesions such as coarctation of the aorta, patent ductus arteriosus, pulmonic stenosis and atrial septal defect are completely curable, and other lesions such as ventricular septal defect and the tetralogy of Fallot are rapidly responding to surgical correction. Nevertheless, the physician still is left with a large group of patients to whom permanent cure cannot be offered, and these people must be guided to the best of the physician's ability.

Most parents who have one child with congenital heart disease want to know about the likelihood of another child's having a similar lesion. This question can be answered by stating that there is less than a 5 per cent chance of another child's having a similar anomaly. However, it is perhaps better to stress the positive by saying that there is greater than a 95 per cent chance that subsequent children will be unaffected. If a second child does have congenital heart disease, it is most likely to be similar to that which affected the first child. Rarely, two different cardiac lesions may appear in the same family, but the occurrence of completely different lesions in three members is almost unheard of.

REFERRAL OF PATIENTS AND CHOICE OF SURGEON

Soon after a patient is suspected of having congenital heart disease, he should be referred to a pediatric cardiologist, who then has an opportunity to do a thorough physical examination and to make roentgenologic and electrocardiographic studies to accumulate base-line data. All physicians would like to know much more about the natural history of many of the congenital cardiac malformations, and it is only by pursuing early studies and following patients conscientiously that such information can be gathered.

If the pediatric cardiologist thinks that further studies such as cardiac catheterization or angiocardiology, or both, are necessary, he should make arrangements to have these tests carried out by consultants qualified to do such work.

If an operation is deemed necessary, the question arises as to where to send the patient. If the lesion is an uncomplicated patent ductus arteriosus, a coarctation of the aorta or an atrial septal defect, one has a broad choice of surgeons. If an open-heart operation for the repair of a ventricular septal defect, the tetralogy of Fallot or an aortic or pulmonic stenosis is necessary, then the choice is greatly limited, for relatively few qualified surgeons are doing such work at present.

I do not believe that patients should be referred to a surgeon directly unless the surgeon first allows his medical colleagues to perform comprehensive studies on the child. A busy surgeon cannot hope to be conversant with all the medical facets of congenital heart disease. He is not trained to evaluate, nor is he particularly interested in, the details of clinical examination, auscultation and electrocardiography, all of which must be faithfully documented so that these records can be carefully analyzed at a later date. I do not mean to detract from the brilliance of many individual surgeons, but simply want to emphasize that teamwork is the essence of good patient care and good surgical results. The ideal center for the study and treatment of congenital heart disease includes (1) a first-class pediatric cardiologist, (2) an excellent cardiovascular physiologist and (3) the best possible surgeon. Even such a team as this cannot guarantee excellent results or that the patient will survive the operation. Yet, if facilities such as these are not provided, the patient is not getting the best available treatment.

SURGICAL ASPECTS, WITH SPECIAL REFERENCE TO THE OPTIMAL AGE FOR OPERATION

Most surgeons prefer to wait until the patient is past the age of one or two years before they perform an intracardiac operation. Surgical intervention can be undertaken earlier, but after a child has developed to the size of the average two-year-old, the risk of operation, with regard to technical factors, is much less than it is in the child who is less than one year of age.

Operation for a patent ductus arteriosus can be done at any time during childhood. The larger lesions are treated surgically as soon as they are detected, and the smaller ones usually are corrected after one or two years of age.

Coarctation of the aorta is also repairable early in the first year of life, especially if the patient is suffering from cardiac failure and does not respond to a medical regimen, or if there is some complicating lesion such as a ventricular septal defect or a patent ductus arteriosus that renders the shunt more dangerous because of the elevated pressure proximal to the coarctation. In view of the possibility of a second coarctation's developing later at the site of the original resection in small babies, most surgeons prefer to delay operation until the patient is between eight and 12 years of age, at which time the aorta is approaching adult size and the risk of recurrence of the coarctation has greatly diminished.

The secundum type of atrial septal defect is repaired at the clinic by the atrial-well technic. Since these lesions are rarely a problem early in life and because this operation is technically much easier in older children, repair is rarely undertaken in patients less than four or five years of age.

Repair of ventricular septal defects is technically difficult in extremely small children, and few such patients (less than six months of age) have been successfully operated upon. It is rarely necessary to operate on these defects in children less than six months of age, however, since most such patients can be controlled medically, and some extremely ill children who display tremendous shunts and congestive heart failure in early infancy are much better later on because of the development of associated pulmonic stenosis or because the shunt becomes relatively smaller compared to the size of the heart as the child grows.

Complete surgical repair of the tetralogy of Fallot involves all the hazards of correcting the ventricular septal defect plus those associated with correction of the infundibular or valvular pulmonic stenosis, or both. Unless the pulmonic stenosis can be adequately relieved, the risk of operation is greatly increased, and thus this also is an operation that is better performed on patients more than two years of age, rather than on small babies. Some surgeons still prefer to perform a Potts shunt in small children with severe tetralogy, and later attempt complete repair of the multiple defects.

Congenital aortic stenosis is best repaired by using extracorporeal circulation, since aortic valvular stenosis or subaortic stenosis, or both, may be present. Attacking the valve from above enables one to relieve the valvular stenosis, but subvalvular stenosis may be completely overlooked and cannot be relieved by this approach.

Isolated congenital infundibular pulmonic stenosis is rare, but the combination of valvular stenosis and infundibular stenosis is common. Some investigators are of the opinion that relief of the valvular obstruction is adequate and that the subvalvular stenosis subsequently will correct itself in time. In at least a few cases, the valvular ring itself is so small that splitting the valve alone is not sufficient to relieve the pressure gradient from the right ventricle to the pulmonary artery. In these cases, insertion of a prosthesis across the valvular ring and out into the pulmonary artery may be necessary.

Repair of total anomalous pulmonary venous drainage also requires the use of extracorporeal circulation. Thus, it is preferable to do this operation on children beyond one or two years of age.

SUMMARY

This discussion of the role of the family physician in the care of children who have congenital heart disease is intended in a general way to review the over-all problem of the physician-family relationship in this field. Emphasis has been placed on certain diagnostic and therapeutic points that may assist the physician in case finding, in making a more accurate diagnosis and in providing medical care to these extremely interesting patients.

A Symposium on Exfoliative Cytology

Dr. Roger B. Scott: It has been said that cancer of the uterine cervix is a curable disease. In other words, if every woman would report to her physician, and if cytologic specimens were *properly* collected, *properly* fixed and stained, and *properly* interpreted by a competent cytologist, and if there were subsequent cooperation between the clinician and the pathologist in obtaining further tissue studies, cancer of the uterine cervix *could be* detected in a preinvasive stage and then could be cured.

In the past five years, for which statistics are available, mortality rates for cancer of the cervix have dropped 18 per cent. This is one of the greatest advances in cancer detection that we have ever known. We must realize that when a visible lesion develops in the uterine cervix, or when symptoms appear, the disease has reached a relatively advanced stage. It has already infiltrated. We owe this changed concept to exfoliative cytology. We know from our studies that premalignant and preinvasive lesions of the uterine cervix usually antedate the invasive lesions by anywhere from five to 15 years. Thus, it is in the premalignant and preinvasive stage that we can hope to pick up the lesions and treat them properly.

Cellular morphology was studied very extensively by Dr. Papanicolaou for some 18 years before the first clinical report by Trout and Papanicolaou appeared. At first it was met with a great deal of skepticism. Many of the pathologists said, "How can we tell anything, or how can anybody tell anything from the single cell when we have had such a hard time accurately diagnosing the histologic lesions themselves?" Well, as has happened in other medical fields, some of those same individuals are saying today—15 or 16 years later—"This isn't anything new." So we have come a long way. I know of one very capable pathologist who was more or less forced to set up a cytology laboratory. He undertook this work with rather poor grace. But subsequently he took additional training, and his most recent feeling is one of tremendous interest. He spends about as much time at it as he does at his other work.

Probably no place in the field of medicine is cooperation as necessary between the cytologist, the pathologist and the clinician. They have to work very closely, and we do not have time to go into the methods of actual investigation prompted by cytologic suspicion. I have been quite fortunate in being able to work with an excellent

cytologist, who is also an excellent pathologist, Dr. James Reagan.

We have found in our studies that the most comprehensive sample of cells from the uterine cervix is obtained by both aspirating the cervical canal and scraping the cervix. Many of the older technics consisted merely of aspirating the material in the posterior vaginal fornix. Other technics included swabbing the cervix or just scraping it. We have analyzed all of these methods and have come to the conclusion that the most comprehensive sample for interpretation is not that which is obtained from the vaginal pool, but that which is obtained by aspirating the cervical canal *and* scraping the uterine cervix. The aspirated material can be blown from the pipette, spread by drawing between two glass slides, fixed and stained.

The scrapings from the uterine cervix are obtained by means of a cut-down tongue depressor blade or by an Ayre's spatula. The scraping should be done vigorously enough to produce a slight amount of bleeding. From our studies, we know that most of the early lesions of the cervix begin at the junction between the squamous and the columnar epithelium. But in the earlier changes, the preinvasive ones, the major degree of change is actually found up in the canal in 90 out of 100 cases and not out on the visible portion of the cervix. This is why the cervical-canal specimen is so important (Figure 1).

What are our results? How proud are we of what we have done? A study in which Dr. Reagan and I collaborated will give you some answers to those questions. Cytologic interpretations of carcinoma *in situ* (preinvasive lesions) of the cervix were pulled from the files of the Cytologic Laboratory at the University Hospitals of Cleveland—127 of them. Further tissue studies in those cases revealed 120 *in situ* lesions, six invasive lesions and one dysplasia lesion (Table 1).

TABLE 1
SUBSEQUENT HISTOPATHOLOGY IN
127 CONSECUTIVE INTERPRETATIONS OF
CA IN SITU, CERVIX

University Hospitals of Cleveland

Ca <i>in Situ</i>	120
Invasive Ca	6
Dysplasia	1
	127

If one looks at the findings from another angle, he notes that 137 carcinomas *in situ* were diagnosed by histopathology (Table 2). What were the

Dr. Scott is an associate gynecologist and obstetrician at the University Hospitals of Cleveland, and an associate professor of obstetrics and gynecology at the Western Reserve University School of Medicine.

pre-diagnosis cytologic readings? One hundred twenty were interpreted as *in situ* cancer, nine as dysplasia and five as invasive cancer. In three instances, the cellular specimens were negative. These negatives occur because the technics can go wrong. The fixing may be wrong, the cells may have dried, and so on.

TABLE 2	
PREVIOUS CYTOLOGIC INTERPRETATIONS IN 137 CONSECUTIVE HISTOPATHOLOGIC DIAGNOSES OF CA IN SITU, CERVIX	
University Hospitals of Cleveland	
Ca <i>in Situ</i>	120
Dysplasia	9
Invasive Ca	5
No malignant cells seen	3
	137

In 397 cases of proved invasive cancer, 93.5 per cent were read as such cytologically; 3.5 per cent were read a little lower than this; 1.5 per cent

were negative; and 1.5 per cent were unsatisfactory. During the same period of time, there were four false-positive cytologic interpretations. Some of these false positives may prove later on to have something as we continue the follow-up. We rely on this method for about 97 per cent accuracy (Table 3).

TABLE 3	
PREVIOUS CYTOLOGIC INTERPRETATIONS IN 397 HISTOPATHOLOGICALLY PROVED CASES OF INVASIVE CANCER OF THE CERVIX*	
University Hospitals of Cleveland	
Invasive Ca	371 (93.5%)
Read Lower	14 (3.5%)
Negative	6 (1.5%)
Unsatisfactory	6 (1.5%)
	397 (100.0%)

*During the same period of time, there have been four false-positive interpretations of cancer.

It may seem fantastic that a cytologist can come as close as he actually does. Figures 2, 3 and 4

LOCATION OF CARCINOMA IN SITU OF THE CERVIX

100 PATIENTS

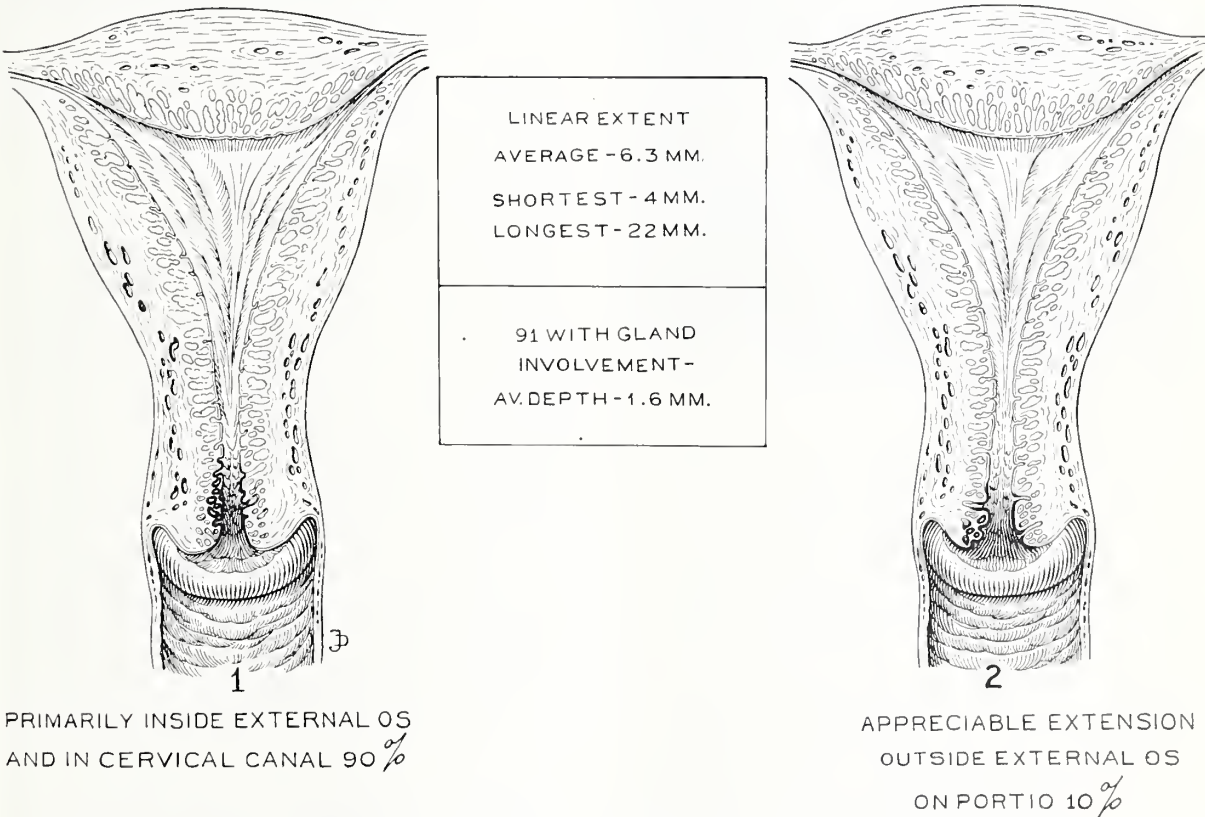


Figure 1. Analysis of the distribution of the histologic changes in 199 patients with carcinoma *in situ* of the cervix. Note that in 90 of these the major epithelial alteration was within the cervical canal and that 91 had gland involvement, which does not represent invasion.

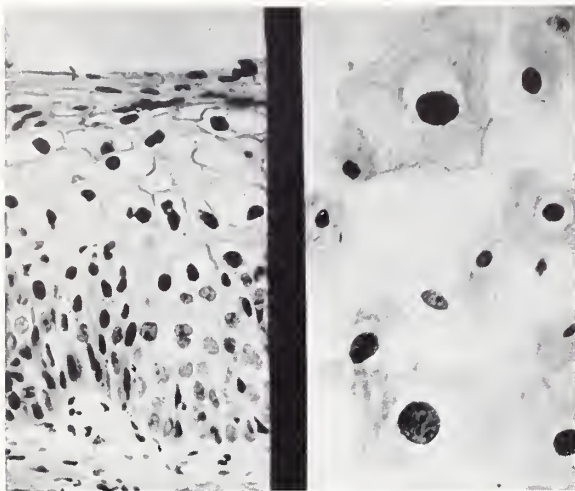


Figure 2. Histologic and cytologic correlation of moderate dysplasia (atypical hyperplasia) of the cervix.

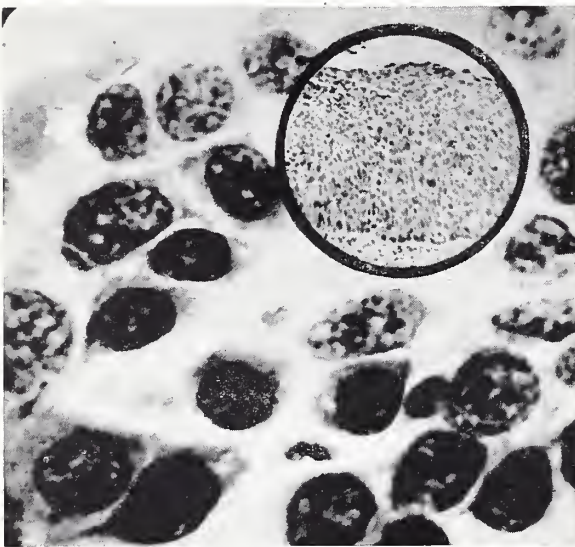


Figure 3. Histologic and cytologic correlation of carcinoma *in situ* of the cervix.

show the histologic specimens and the corresponding cytologic study for dysplasia, carcinoma *in situ* and invasive carcinoma of the cervix. By the number of cells which have been altered, by the nuclear-cytoplasmic ratios and by various other methods, the cytologist can come pretty close to interpreting what will be found in the fixed tissue specimens.

In our laboratory, the mean age for dysplasia is 34 years, for carcinoma *in situ* 41.5 years and for invasive carcinoma of the cervix 48.2 years. Certainly all cervical dysplasias do not eventuate in cancer, but this progression through stages over a period of years happens often enough so that ideally we can, through cytologic studies, suspect the alteration when it is a premalignant

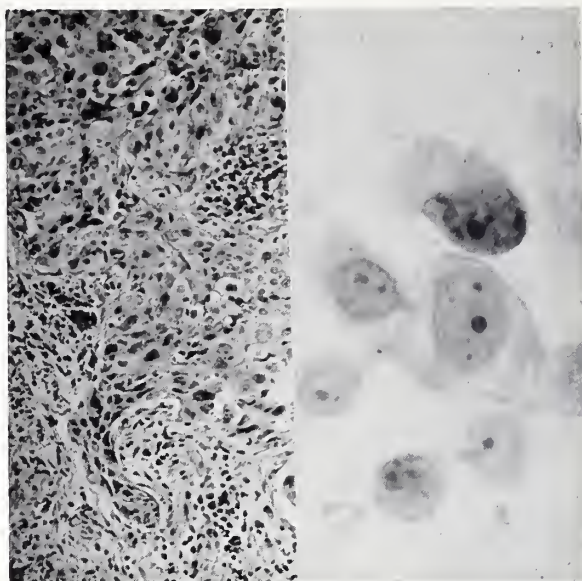


Figure 4. Histologic and cytologic correlation of invasive squamous cell carcinoma of the cervix.

or preinvasive lesion. Proper tissue diagnosis and treatment before invasion occurs are resulting in practically 100 per cent cures. We recommend yearly pelvic examinations for all women, and we stress that no pelvic examination is complete without a cytologic study.

The individual who establishes a cytology laboratory will soon find that he has a bull by the tail. For example, in our Cytology Laboratory, specimens from fewer than 500 patients were examined in 1947; last year, specimens from over 30,000 patients were examined there.

I haven't mentioned endometrial carcinoma. Our results are not nearly so impressive there, approximating only 65 or 70 per cent accuracy. Fortunately, the woman with this type lesion is older, she generally has had postmenopausal bleeding, and complete diagnostic studies by curettage and biopsy are mandatory. The cytologic study is only ancillary.

It should be mentioned that cytologic interpretations are probably the cheapest and are among the best assays for estrogen influence. Recent studies have suggested the prognosis in any given pregnancy may be made from cytologic studies.

We use cellular studies in our follow-up of patients treated for malignancies. On rare occasions, we have picked up malignant cells shed from a carcinoma of the fallopian tube or from a carcinoma of the ovary. We had one rather fantastic case in which we detected a metastasis within the uterus from a primary carcinoma of the gallbladder.

We—and womankind—owe a tremendous debt of gratitude to this technic. When used properly and in conjunction with adequate physical and



Figure 5. Pyelogram showing a filling defect. Urine obtained from this kidney showed abnormal cells.

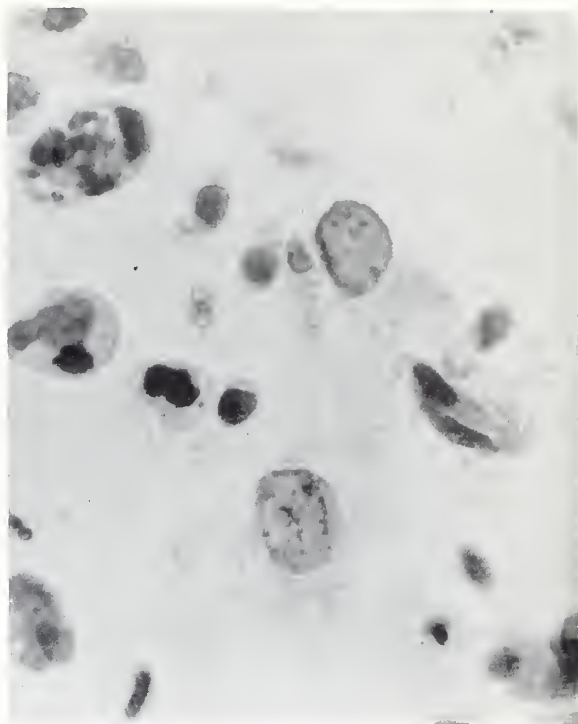


Figure 6. One abnormal cell from the same patient.

pelvic examinations, it helps us do everything possible to detect early malignancy in the female.

Dr. John Fatland: The demonstration of abnormal cells in the urinary sediment has proved to be a useful and helpful diagnostic clinical aid in urology, as well as in other fields. It is most reliable in the detection of tumors arising from transitional cell epithelium, but has proved to be of little help in the solid parenchymal tumors such as hypernephromas and adenomas. It also has special value in the examination of inaccessible portions of the urinary tract, the ureters and the kidney pelves. Those, in contrast with the bladder and the urethra, are areas that we are unable to submit to direct visualization. It is also an aid in differentiating tumor from non-opaque stone and blood clots when they appear as filling defects pyelographically.

The material for examination, preferably, is freshly-voided urine, but in many instances this is impracticable or impossible to secure, so urine preserved with 95 per cent alcohol is a satisfactory specimen. The urine is centrifuged, and the sediment is stained by the usual Papanicolaou technic.

Although no specific morphologic criteria have been established for malignant cells, the abnormal

cells do have certain rather characteristic features. The most important, as Dr. Scott has mentioned, is the reduction in the ratio between the cytoplasm and the nuclear substance. The nucleus is frequently large, with a thick wall. There is an increase in the chromatin material, and the nucleoli are usually irregular and may be multiple. It must be borne in mind that cytology is not intended to replace any of the present diagnostic methods, but must be thought of as an adjunct to our present technics and as a means of obtaining additional information.

I should like to use a few representative cases to illustrate these points. The first patient is a 44-year-old man with the solitary complaint of hematuria on one occasion. The illustration* (Figure 5) is a pyelogram and is not too distinct, but it shows a filling defect which was persistent on several films. The urine obtained from this right kidney showed abnormal cells.

The next picture (Figure 6) shows one such cell, and shows the small amount of cytoplasm and the enlarged nucleus with a thickened nuclear membrane. The nucleoli are not well seen.

A nephrectomy was performed, and here (Figure 7) is a low-power field of the entire tumor. The tumor measured 1.5 x 0.5 cm., and was a papillary tumor of the renal pelvis.

Dr. Fatland recently left the staff of the Department of Urology at the S.U.I. College of Medicine, and entered private practice with Drs. C. W. Losh, Jr., and Sr., and William C. Shinkle, in Des Moines.

* *Dr. Fatland's* slides were made available to him through the courtesy of Drs. R. H. Flocks and R. G. Bunge, of the Department of Urology at the S.U.I. College of Medicine.



Figure 7. Same patient. Low-power field of entire tumor.

The second patient was a 65-year-old man with a past history of bladder tumor. He had been treated by resection on two occasions. He entered the hospital complaining of intermittent hematuria. Cystoscopic examination revealed no tumor. The pyelogram showed a slight hydronephrosis and a filling defect in the ureter. Urine from this kidney also revealed abnormal cells, and here (Figure 8) you see the gross tumor of the ureter.

This again (Figure 9) is the abnormal cell. It frequently has a tadpole appearance—elongated and rather characteristic of transitional cell epithelium.

The last patient is a 70-year-old man with a history of hematuria of only 24 hours' duration. Cystoscopically, blood was seen coming from the left ureteral orifice, and an examination of the urine revealed abnormal cells. In this instance, the differential diagnosis between blood clot and non-opaque stone is very important. On the basis of all of the findings, a nephroureterectomy was performed, and this (Figure 10) is an example of the tumor. The last slide (Figure 11) shows the microscopic pattern of the lesion.

In summary, I think we can say that the urinary tract lends itself very well to the use of cytology as a diagnostic aid. Tumors arising from transitional cell epithelium are detected with a high degree of accuracy by the proper cytologic evaluation of the urinary sediment.

Dr. Kenneth R. Cross: I was asked specifically to comment on the overall field of cytology from the pathologist's standpoint, giving some particular attention to the preparation of the material and touching a little on my experience with the concentration method of cytology.

In general, the preparations that I have had a chance to examine have been good preparations, but I think it is important to emphasize to those of you who are making these smears that the procedure should be regarded as a diagnostic one, rather than just as a cosmetic exercise. As has already been indicated, a certain amount of trauma to the tissue from which these preparations are obtained is essential. It is true that some neoplasms will have ulcerated on the surface, and smears of cancer cells can thus be readily obtained, but such is not usually the case, particularly if the neoplasm is early. The first cells to show malignancy are the basal cells, and they may infiltrate under the adjacent mucosa and show up on the surface very late. The covering epidermis, then, must be and can be easily separated to expose these neoplastic cells. It is for that reason that I think a little trauma is necessary.

Second, I should like to emphasize that the specimen must be handled gently. If it is taken on a swab that is rolled in the cervix, then it should be unrolled on the slide. If taken by scraping with a blade, then it should be smeared gently onto the slide. Too often, the physician who collects the specimen smears it thoroughly to make the slide attractive to the eye, but we who examine the slide would much rather see intact groups of cells rather than a grossly attractive smear, for then we actually have little pieces of tissue—small biopsies—for evaluation.

Briefly, we have used acetone for fixation, and have found (or such has been my experience, at least) that it is just as satisfactory as the alcohol-ether, and that it is less volatile and much easier to handle.

Much has been written about sponge biopsies. The procedure is one in which a sponge preparation is rubbed across the neoplasm, and then the whole thing is sectioned. My general experience with sponge biopsies has not been particularly satisfactory, but I have examined a great many mucous plugs that bronchoscopists had extracted from the bronchial system. I believe they are, in reality, sponge biopsies. These mucous plugs must be removed if one is to control the pneumonitis that develops distal to them. I should like to emphasize the desirability of extracting them as carefully as possible and of fixing them immediately—taking care, all the while, to handle them gently—for about their margins there often are many clumps

Dr. Cross is acting chief of the Laboratory Service at the Veterans Administration Hospital in Iowa City, he is the pathologist at Mercy Hospital there, and he is currently president of the Iowa Association of Pathologists.



Figure 8. Gross tumor of the ureter. Second patient.



Figure 10. Tumor revealed by nephroureterectomy in 70-year-old man with history of hematuria of only 24 hours' duration.



Figure 9. Abnormal cell has the elongated appearance characteristic of transitional cell epithelium.

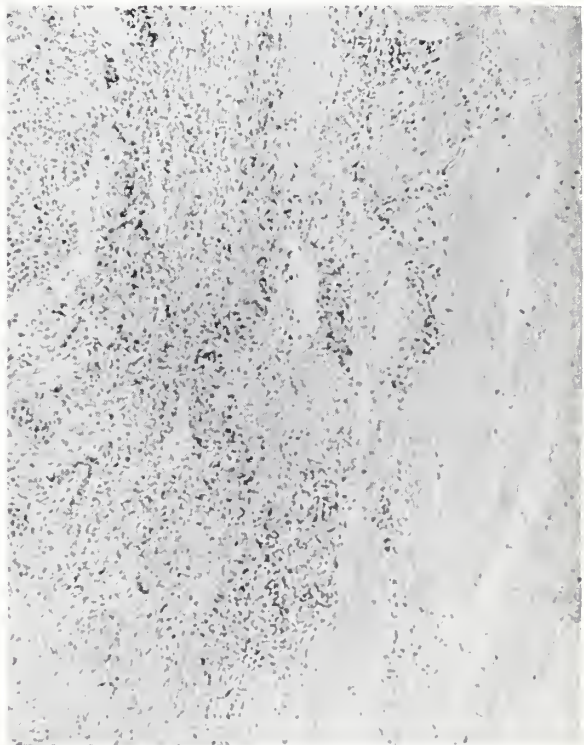


Figure 11. Another example of the abnormal cells.

of neoplastic cells. The plugs are made up of inspissated mucous material, necrotic debris and sloughed epithelium. I am thinking particularly of the case of a physician who was recently diagnosed and operated upon for carcinoma of the lung. Beforehand, a mucous plug had been extracted from a lower-lobe bronchus, and when it was sectioned, huge masses of neoplasm were removed with it. Actually, the sheets were larger than the biopsy itself.

We have been interested for quite a while in bronchial washings, and I should like to say a few words about them. The work really began in Des Moines at the Veterans Administration Hospital. We decided not to examine the sputum, for we felt that if we looked at all of the sputum sent to us, we should need about three pathologists, and besides, all persons who had any suspicion of a lung lesion were bronchoscoped anyway. With the wonderful cooperation of Dr. Byron Merkel, we examined material, then, which had been washed from the tracheobronchial tree of every person bronchoscoped.

I marvel at the ability of the bronchoscopists to get as many good biopsies as they do, but there are times when they fail. They have the mechanical and optical disadvantages of their instrument to contend with, and the upper-lobe bronchi and some of the smaller bronchioles present further difficulties. But also, and perhaps most important, is the fact that some of the many neoplasms have not ulcerated at the time they are first examined, and may have produced only a little roughening or pebbling of the mucosa. Thus, we are faced with the same necessity that I was talking about with respect to the cervix. A little trauma, then, becomes essential!

In addition to good technic, there is need for a specific desire on the part of the bronchoscopist to make a diagnosis. The area is actually excoriated with an aspirator tip, and then washed forcefully with saline—*placer mining* is a good term for the procedure—and it is then aspirated directly into formalin, centrifuged to bring these clumps together, and then examined like any other surgical specimen.

With a technic like this, we have been able to make diagnoses expressed as "positive" or "highly suspicious" in over 80 per cent of cases examined, and some of them have been very early, without an obvious presenting lesion. It is better and it is much less time-consuming than the examination of sputum. Time-wise, for all personnel concerned, the saving has been as great as four hours per patient.

We pathologists can look at a section of skin from a given area of the body and make a fairly good estimate as to the age of the patient from whom it was removed. Likewise, I can look at a bronchial washing and give you a pretty good idea of the time status of the resident in otolaryn-

gology who submitted it, or of how much he really wanted to make a diagnosis. The first-year man or the indifferent one will present me with some gunk that he has aspirated rather gently from the tracheobronchial tree. One who is further along in his training or who takes his task seriously will give me a little blood and some excoriated mucosa, whether it be benign or malignant, for evaluation!

Finally, don't be carried away by this term *cytologic diagnosis of cancer*. I think it implies to most of you that we pathologists can make an unequivocal diagnosis of cancer on the basis of just one cell. But if you think for a moment, and recall in your mind's eye the illustrations you have seen, whether of sections or smears, it will occur to you that it is from clumps or groups of cells, with their *in situ* relationships, from which the diagnosis of cancer has been made.

I remember that in the first year of my residency, I found a cell in mitosis in the liver. It was gaudy, huge, and I marked it carefully and called it to the attention of my chief. Suspecting that I was thinking of malignancy, he smiled and said, "We are really pretty hard up when we have to make a diagnosis of malignancy on the basis of just one cell." That incident has remained in my mind ever since.

I repeat, then, that mild trauma to get little pieces of tissue—tissue fragments—from whatever source is justified. The preparations, whether they be smears or sections, should be handled carefully, so as not to disturb, squish or break up the cells, but to keep them in their usual relationships if possible. If the material is aspirated through the bronchoscope, it should be collected directly into formalin to start early fixation, and centrifugation should be started quickly to bring the sticky clumps together. Then, when these things have been done with a positive and diagnostic attitude, you'll be surprised how much smarter the pathologist can be!

Dr. Merle J. Brown: Cytologic technics as currently applied for early diagnosis of neoplasia have not generally improved the survival rates of cancer patients. Most of these diagnostic procedures are cumbersome and time-consuming to the extent that they are used most in clinical research centers. Skilled cytology technicians are not available in most general hospitals, and not all pathologists are adequately schooled in cellular interpretation. It can therefore be said that the routine use of cytologic procedures for diagnosis of cancer in the general surgical field is not feasible at present.

Attempts at diagnosing cancer from smears of ascitic fluid date back to the middle of the last century. Bahrenberg,¹ in 1895, described the first centrifuge and paraffin methods. Out of these early

¹Dr. Brown is a private practitioner of surgery in Davenport.

attempts to diagnose cancer from body fluids have developed the modern methods of exfoliative cytology for various organs of the body. Zemansky¹ established the criteria for diagnosis of malignancy: (1) the finding of fragments of tissue with definite arrangement of cells to form acini, papillae or multiple groups of large, deep-staining cells; (2) irregularity of cell outlines; (3) eccentricity of nucleus; (4) macronucleosis; (5) multinucleated cells; and (6) typical and atypical mitotic figures.

The nucleolar-nuclear ratio was found by Foot¹ to be important in cancer-cell diagnosis. Cancer cells have been found to be lighter than normal cells. Papanicolaou¹ has stated that "anisonucleosis associated with anisocytosis constitutes an important diagnostic point because it rarely occurs in non-malignant conditions." Sattenspiel¹ noted that cellular membranes are thickened, and that a relatively large nuclear-cytoplasmic ratio is present in cancer cells.

The cancer-cell studies made by three methods give about equal results: (1) direct smear; (2) paraffin block sections; and (3) stained cell suspensions.

Graham and Graham² described a cervical cancer cell change which made them unlike normal cells. This change was designated as sensitization response, or S.R. Patients with 10 per cent or more showed a high percentage of five-year survivals. The S.R. can be increased through the administration of testosterone propionate or alpha-to-copheral in cancer of the cervix. These substances may therefore increase responsiveness to irradiation. The radiation reaction⁷ (R.R.) and the S.R. as applied to cervical cancer are not effective with lesions of the esophagus.

In recent years, more attention has been directed to the study of cancer-cell exfoliation to other than body cavities and orifices. Attention has been directed to the study of venous transmission of such cells and their distant implantation. Fisher and Turnbull³ found cancer cells in trapped venous blood in five patients with rectal neoplasms, and in three with lesions of the transverse colon, out of 25 patients studied.

McDonald and Dahlin⁴ have enunciated the opinion that the stain is less important than the cytologist. For proper cytology studies, the laboratory must have technicians called "scanners" with adequate training so that the pathologist can spend his time in reviewing only the suspicious smears. These authors have suggested that the micro-fluorometric method now being studied may make procedures more sound and more economical.

McDonald and Dahlin⁴ have noted that smear techniques are most valuable for carcinoma of the cervix (*in situ*) and pulmonary neoplasms. McDonald found in 1,000 consecutive positive diagnoses based on the examination of sputum and bronchial washings that only 10 false-positive tests had re-

sulted. He noted that 30-40 per cent of bronchogenic carcinoma cells are not present in the sputum. He maintained that other diagnostic procedures give poorer results in pulmonary cancer than does cytology.

Papanicolaou *et al.*,⁵ after doing aspirations of 100 patients and examining the nipples of 2,010 for discharge, concluded that negative reports cannot be relied upon to rule out carcinoma of the breast, but that positive reports are as reliable as are other cytologic applications. Secretions were obtained from 1,066 (50.5 per cent); 917 patients were asymptomatic; 171 had secretions from the nipple; and 74 of that number were bilateral. More were from premenstrual than postmenstrual, with the peak age between 20 and 39 years, and in the fourth week of the menstrual cycle. Among 438 asymptomatic women, smear cytology showed adenocarcinoma in just one and preclinical cancer in four.

Haagensen and Stout⁶ showed that aspiration biopsy is not reliable. The disadvantages of the method are: (1) Trauma may squeeze cells into veins. (2) Cystic disease and cancer may coexist. (3) Aspiration becomes more difficult as the cancer diminishes in size. The Memorial Hospital Group, in New York City, has advocated aspiration biopsy for years.

Specimens can be gathered for gastric cytology by abrasive or by lavage methods. The abrasive techniques employ the Ayre brush, the abrasive gastric balloon of Cooper and Papanicolaou, or the antral balloon of Rubin *et al.* For the lavage methods one can use saline or Ringer's solution, papain (mucolytic), or chymotrypsin.

Grimes and his associates⁸ have stated that perfected cytologic techniques have less effect on gastric cancer rates than might have been expected. They have noted that aspiration cytology of the stomach with normal saline gives insufficient cellular material to be of help. They quoted Seybolt, Papanicolaou and Cooper as having increased the cytologic accuracy from 32.8 per cent to 62 per cent by using intensive lavage with Ringer's solution, and adding inflatable abrasive balloons. These authors developed the "papain lavage" using papain solution buffered with $\text{Na}_2\text{HPO}_4 \cdot 12\text{H}_2\text{O}$ and 0.4 M of one normal HCl to five gallons of distilled water and activated by 0.1 Gm. of cysteine HCl. They believe the buffered solution protects the cell's released from the mucus. This solution is allowed to remain in the stomach for only ten minutes because of the danger of digestion by the enzyme. Trout reported a study of 414 cases in which 42 lesions were found. Twenty-eight cases were positive; five were false-negatives; and five patients had prepyloric obstruction. The papain method is of course ineffective when the lesion has become obstructive.

Mayo, Bruns and others⁹ used the chymotrypsin lavage method, and found 10 malignancies of the

stomach among 50 cases studied. Six of these were confirmed by microscopic tissue studies. Two were confirmed at autopsy. One patient refused surgery, and one case operated upon showed no malignancy and was classified as false-positive. This method is time-consuming and requires meticulous care. Aspirated fluid from the gastric lavage must be processed by centrifuging within 10 minutes, and the staining of the smears must be done rapidly.

The technics for applying cytology to the diagnosis of esophageal cancer are similar to those used for diagnosing cancer of the stomach. Hershenson *et al.*¹⁰ have developed a bedside method in which an esophageal bougie with fine-mesh gauze attached to it is passed over the lesions, and smears are made at once. The authors claim that it takes less than one minute. Correct positive diagnoses were made in 13 cases, and negative diagnoses were made in 23 cases.

Gephart and Graham⁷ claim positive washings in 89 per cent and false negatives in 5 per cent of cases in which they performed the lavage technic.

Fisher and his associates³ have shown malignant cells in the veins in large-bowel cancers. Smears from the large bowel may show a confusing picture, according to Wisseman and others.¹¹ Smears may show yeast, undigested food particles, mucus, blood cells, squamous cells, eosinophils, ghost cells, trophozoites of *entameba histolytica*, normal cells and glandular crypt structures. X-ray radiation will alter these elements. The authors showed that exfoliated tumor cells of the large bowel show deviations from normal. The cancer cells are considerably larger than normal ones. They stated that in 75 per cent of cases in a series at Massachusetts General Hospital, carcinomas of the rectum and sigmoid colon were diagnosed correctly. They noted that obstructive lesions may result in negative smears. They claimed that cytologic diagnosis is 76 per cent accurate, as compared with 67 per cent for sigmoidoscopy and 79 per cent for x-ray. The method is not accurate for carcinoma of the right, transverse and ascending colon.

The application of cytology to the fluid of effusions and ascites has been studied since the early part of the century. The methods of centrifuging, smearing and staining introduced by Papanicolaou have made the diagnosing effort worthwhile. Sattenspiel found nine positive and eight negative smears for carcinoma in 17 cases, where six pleural and 11 abdominal fluids were employed. The paraffin block method may be applied to the sediment from these fluids.

Recently, at the Royal Victoria Hospital, Montreal, it was demonstrated that cancer cells can be isolated from the general blood stream. Aspirated blood was treated with 260 cc. of streptolysin in normal saline and filtered through six layers of Millipore filters (Millipore Filter Corp., Watertown, Massachusetts. Filter costs \$70, and box of

fillers costs \$40.) Several breast and colon carcinomas were diagnosed by this method.

TABLE 4
CYTOLOGY
ST. LUKE'S HOSPITAL, DAVENPORT, IOWA,
1952-1958, INCLUSIVE

System	No. of Tests	No. Positives	No. Negatives
Respiratory	116	8	108
Genitourinary	6	1	5
Pleural Fluid	46	4	42
Peritoneal Fluid	32	6	26
	200	19	181

Approximately 9 per cent of the studies performed at St. Luke's Hospital, Davenport, during the years 1952-1958, inclusive, indicated the presence of cancer. No data are available to determine the accuracy of the positive tests in this series.

Thus, in conclusion, I can say that early attempts to diagnose cancer were made before Papanicolaou. Today, exfoliative cytology is a useful diagnostic aid in studies of the pulmonary system, esophagus, stomach, colon and body cavities, if the pathologist and his technicians are adept at making the preparations and interpretations.

Dr. F. Johnson Putney: Cytologic examination has played only a minor role in diagnosis of malignant lesions of the upper air and food passages, for most of these areas are accessible to direct vision and biopsy. There are two notable exceptions, however, the malignant lesions of the maxillary sinus and the nasopharynx.

In a suspected lesion of the antrum, lavage by means of a needle introduced through the lateral nasal wall has given positive findings when there has been clinical evidence of invasion of the sinus. Since carcinoma of the maxillary sinus is rare, the number of cases in which the diagnosis is made by this method is also quite small. In some cases of malignancy of the nasopharynx, the tumor may be located either deep in Rosenmuller's fossa or in the eustachian orifice itself, and thus it is not readily accessible to direct biopsy. It these cases, irrigation and examination for malignant cells may be helpful. The tumor must first be visualized, either by means of a post-nasal mirror or through a nasopharyngoscope, so that it can be determined which area is to be excoriated and lavaged for neoplastic cells.

The chief value of cytologic examination is in the detection of bronchogenic carcinoma, as Dr. Cross has pointed out, and I'd like to emphasize many of the things that he mentioned. First of all, the percentage of positive biopsies is in direct

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ratio to the percentage of *inoperable* cases, and it is only by securing an early diagnosis, before there is any visible bronchoscopic evidence of disease that the lesion can be resected adequately at operation. In cancer of the lung, cytologic study can be done on sputum, on spontaneously discharged bronchial secretions and on bronchial washings that have been removed through the bronchoscope.

Although the diagnosis can be made when neoplastic cells are found in the sputum, in most instances when this occurs the lesion is already far advanced. In early cases, the cough is usually non-productive, so that cancer cells are not exfoliated into the tracheo-bronchial tree to be coughed up for examination. Unless the roentgenogram can delineate the lesion definitely, analysis of the sputum does not localize the carcinoma in any specific site.

We have employed bronchial washings removed through the bronchoscope, and feel that the percentage of positive diagnoses is increased, and at the same time exact localization is determined. In the latest series of approximately 500 cases at Jefferson, the diagnosis was established preoperatively in 65 per cent of cases. Twenty-five per cent of these were established on positive biopsy, and 40 per cent on positive cytology. An exploratory thoracotomy was needed in the 35 per cent negative cases to make the diagnosis.

The percentage of positive cytologic findings has

decreased in recent years, and the main reason is that 15 years ago, when this work was started and when 85 per cent positive reports were obtained, one cytologist examined every smear and spent perhaps as long as 30 minutes searching for malignant cells in each one. At the present time, with a shortage of trained personnel in the general hospital, these smears are not handled in that way. The duties have been delegated to a technician, who looks over the slides and screens them, and if she thinks they are negative does not place them in the hands of the cytologist. Thus, the technician is the only one who sees the slides that are considered "negative." If the cytologist could spend as much time on each slide as formerly, when, of course, the burden of work was much lighter, the number of positive diagnoses would be materially increased.

Secretions for cytologic study must not be collected haphazardly. The work must be properly performed, for a negative opinion or a false-positive finding interferes with the disposition of the case. The accuracy of the cytologic diagnosis depends just as much upon the bronchologist as upon the cytologist, although the experience and knowledge of the pathologist are important, and care must be taken not to miss any small section containing cancer cells. In some instances a positive cytologic diagnosis has been obtained in peripheral lesions, but the percentage decreases proportionately with

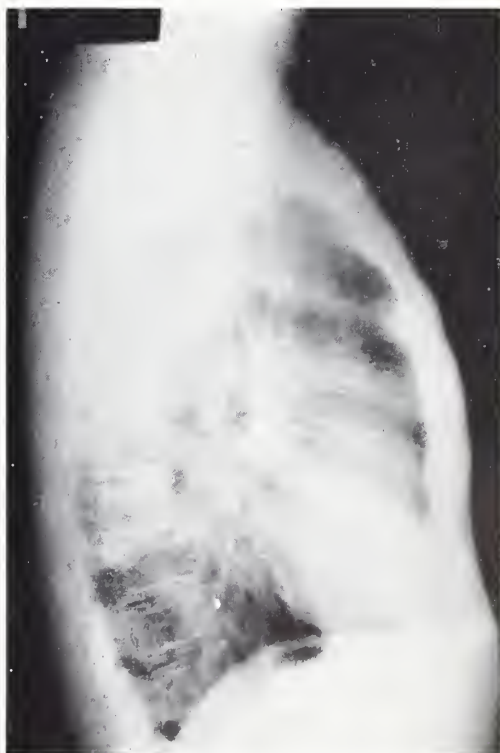


Figure 12. Roentgenogram of a lesion in the lingula of the left lung. The diagnosis was established by the finding of cancer cells in the bronchoscopically removed secretion from this area.

the proximity to the main bronchi. In addition, the bronchologist should give an opinion on the entire tracheobronchial tree from the larynx down, and in certain cases an opinion on the esophagus as well.

Before securing secretions for cytologic examination, the bronchologist should ascertain the anatomic location of the suspected lesion from a lobar or segmental standpoint, and also determine whether it is necessary to posture the patient in order to obtain an adequate specimen. If the roentgenogram doesn't clearly show the segment involved, several segments of the lobe or lobes should be washed, and separate specimens obtained from each for histologic study. In upper-lobe lesions particularly, it is often advantageous to place the patient with the involved side downward, so that saline solution can be introduced into the involved bronchus by means of a curved aspirator, and likewise aspirated when the patient is turned on his back and the solution runs out of the upper-lobe bronchus.

It is my opinion that lavage should be performed in all suspected cases, rather than aspiration alone. To do this, an assortment of straight and curved flexible aspirating tubes and appropriate collectors are necessary. Also, one should bear in mind that excessive tubing should be avoided. If a large amount of rubber tubing is used, much of the secretion catches in the rubber and may not be washed out into the collector.

After the specimen has been obtained, it should be sent promptly to the pathologic laboratories, so that immediate fixation either with alcohol and

ether or with acetone can be done. The actual staining and the microscopic examination can be done at a later date. As Dr. Cross pointed out, it is also well to centrifuge the specimen or inspect it closely and pick out the clumps of mucus or debris, and make sure that those clumps of tissue are submitted to microscopic scrutiny.

In our experience, an occasional false-positive for bronchogenic carcinoma has occurred, but such occurrences have totaled less than two per cent.

I shall show you just a few representative slides to point out the things that I have been saying regarding bronchogenic carcinoma. The first slide (Figure 12) shows a typical bronchogenic carcinoma near the hilum, with a definite mass present which seems to be located in the lingula. There is no question about the diagnosis, and from the roentgenogram one would suspect that a carcinoma was present, but on direct inspection there was no abnormality noted. Cytologic washings proved to be positive, and it is always better to have a positive diagnosis before exploratory thoracotomy.

The next picture (Figure 13) is of another patient with a lesion in the left hilar area and with a similar history of cough. A bronchoscopic examination again was negative, and there were no visible evidences of tumor, yet cytologic washings were positive.

I also want to make brief mention of another patient. His chief symptom was hemoptysis, and there was no visible lesion on the x-ray film. He was subjected to bronchoscopy for diagnostic purposes—to find out where the bleeding was coming



Figure 13. Roentgenogram of a 45-year-old man with cavity and fluid level. Bronchoscopy revealed no abnormality, but secretion secured from the left upper-lobe bronchus contained cancer cells on cytologic examination.

from. Blood was found coming from the apical sub-division of the left lower-lobe bronchus. Washings from this area were obtained, and positive cancer cells were found. In this patient, the diagnosis was made before there was visible evidence of disease. This man was subjected to pneumonectomy and is expected to be well for many years.

Cytologic examination has enabled us to make the diagnosis of bronchogenic carcinoma much earlier than formerly when biopsy was depended upon. However, there still remain at least one-fourth to one-third of the cases in which the diagnosis is not determined preoperatively. Earlier diagnosis and an increased resectability rate still seem to be dependent upon the recognition of cough as possibly due to bronchogenic carcinoma, and surgical exploration of even the smallest abnormal pulmonary shadow.

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The Viral Meningitis Syndrome

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IN THE PAST two years there has been a gratifying reduction in the incidence of infection with and paralytic disease due to the polioviruses. Cases previously lumped together as "nonparalytic polio" but now recognized as aseptic meningitis due to other viruses continue to occur, especially during the summer months.

Aseptic meningitis is a term used for a syndrome associated with characteristic cerebrospinal-fluid findings that are not due to obvious bacterial or fungal etiology (Table 1). During recent years, by

means of improved virologic technics, a number of viruses have been recovered from patients with this syndrome and have been shown to be the causative agents of it. It is now recognized that many members of the enterovirus group other than the polioviruses are frequent causes of this disease syndrome. (The enterovirus group of agents is made up of the ECHO viruses, the polioviruses and the Cocksackie viruses listed in Table 2.)

TABLE 1
CHARACTERISTICS OF THE CEREBROSPINAL FLUID
IN VIRAL (ASEPTIC) MENINGITIS

Clear; colorless; occasionally opalescent
Pressure normal or elevated
Usually less than 1,000 cells/cu. mm.*
Predominance of mononuclear cells
Sugar normal
Protein normal or increased
Smear and culture for bacterial and fungal pathogens negative.

* Occasionally there may be 6,000 to 8,000/cu. mm. in an ECHO 9 infection.

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TABLE 2
MEMBERS OF THE ENTEROVIRUSES

Virus	Number of Types
Poliomylitis	3
Cocksackie Group A	20*
Cocksackie Group B	5*
ECHO	24*
	52

* Other newly recognized types will be added soon.

There are many causes for the aseptic meningitis syndrome, such as lymphocytic choriomeningitis, parasitic disease, toxins, leptospirosis, mumps and arthropod-born encephalitides. This presentation will concern itself chiefly with the discussion of the disease due to the various members of the enterovirus group.

CLINICAL MANIFESTATIONS

A summary of the clinical manifestations of the aseptic meningitis syndrome due to viruses is contained in Table 3. Generally, the different enteroviruses produce a clinical picture that is remarkably uniform. Occasionally, however, there may be pertinent clinical information that may help the physician determine which of these viruses is causing the disease (Table 4).

TABLE 3
VIRAL MENINGITIS
SUMMARY OF CLINICAL MANIFESTATIONS

Headache; drowsiness
Fever (may be high)
Vomiting
Retro-orbital pain
Meningismus
Ataxia; vertigo
Convulsions
Paresis; paralysis
Signs of encephalitis
Exanthems

TABLE 4
INFORMATION OF VALUE IN THE
DIFFERENTIAL DIAGNOSIS OF
VIRAL MENINGITIS DUE TO THE ENTEROVIRUSES

Polioviruses
1. Epidemiologic history of contact with a sick individual with paralysis is strongly indicative.
2. Actual paresis or paralysis is a good indication.
3. A history of adequate immunization makes the diagnosis of poliomyelitis unlikely, but does not rule it out.
Coxsackie Group A Viruses
1. Only a few of the more than 20 types can cause aseptic meningitis.
2. It occasionally is associated with herpangina.
3. Usually, cases occur sporadically.
4. Muscular paresis of a transitory nature occurs rarely.
Coxsackie Group B Viruses
1. These pathogens may cause epidemic aseptic meningitis.
2. Cases may occur simultaneously with pleurodynia, or in persons with histories of contact with a patient with pleurodynia.
3. There may be a severe local or generalized myalgia with retro-orbital pain.
4. Remissions and exacerbations are frequent during the course of the illness.
5. Occasionally, there is paralysis.
ECHO Viruses
1. They may be responsible for epidemics of aseptic meningitis.
2. They rarely cause paresis, and it is transitory.
3. There is often a simultaneous rash or a history of contact with a person ill with an exanthematous illness.

POLIOVIRUSES

If the aseptic meningitis syndrome is accompanied by definite and quite severe paralysis, the etiologic diagnosis of poliomyelitis will probably be substantiated in over 95 per cent of cases if specific virologic studies are done. Paresis and actual paralysis have been observed on rare oc-

casions with certain of the ECHO and Coxsackie viruses. Here, however, the paralysis is not severe, and in almost all reported instances has been transitory. If a patient with aseptic meningitis has had contact with a patient with paralysis, then the likelihood of poliomyelitis is again good. The history of adequate immunization with poliomyelitis vaccine would make this diagnosis unlikely, but it does not exclude it. In our laboratory, we have studied two families previously immunized who developed poliomyelitis infections. The members of the one family had received only two injections, whereas the members of the other family had received three appropriately spaced inoculations of the vaccine. An adult member of each family had severe paralytic disease, and one of them succumbed to the illness. In both families other infections occurred, but they were all asymptomatic and confined to the gastrointestinal tract.

Case 1. A 13-year-old boy was admitted to University Hospitals on August 12, 1958. For two days prior to admission, the patient had complained of headache and pains in the back, and had vomited quite frequently. The boy had received no poliomyelitis immunizations, but had had no contact with an ill individual.

On physical examination, his temperature was 101°F., and his blood pressure was 140/70 mm. Hg. He had moderate rigidity of the neck and positive Brudzinski and Kernig signs. There was a positive tripod sign. There was much spasm of the back muscles, but there was no paresis or paralysis. The patient's reflexes were hyperactive but equal. The leukocyte count and the differential count in the peripheral blood were within normal limits. The examination of the cerebrospinal fluid revealed 300 cells, 50 per cent of which were lymphocytes. The protein was 69 mg./100 ml., and the sugar was normal. An electrocardiogram was taken and showed abnormalities suggestive of pericarditis. The clinical diagnosis of aseptic meningitis was made. After an uneventful recovery, the patient was discharged well.

He was seen one month later in a follow-up clinic, and at that time there was definite mild paresis of the left iliopsoas and middle gluteus muscles.

From throat washings and anal swabs a virus was isolated in monkey-kidney cell cultures. By virus neutralization test, this agent was identified as poliovirus type 3. Studies of the serums collected during the acute and convalescent phases of the patient's illness revealed a rise in antibodies against this agent (Table 5).

The findings of rather severe spasm of the back muscles, coupled with the fact that the patient had not received poliomyelitis vaccine, made the diagnosis of poliomyelitis quite likely. The finding of weakness in certain muscle groups on follow-up examination establishes poliomyelitis as the clinical diagnosis without benefit of virologic diagnostic tests.

TABLE 5
ASEPTIC MENINGITIS SYNDROME WITHOUT PARALYSIS
AT UNIVERSITY HOSPITALS, IOWA CITY, 1957-1958

Patient	Virus Isolated	Antibody Studies*	
		Acute	Convalescent
1	Polio III	16	256
2	Polio III	16	128
3	Polio I	4	128
4	Polio I	4	128
5	ECHO 5	4	64
6	ECHO 8	4	16
7	ECHO 9	4	64
8	ECHO 9	4	32
9	ECHO 9	4	64
10	ECHO 4	4	256
11	Cox. B-4	8	128
12	Cox. B-5	8	256

ASEPTIC MENINGITIS SYNDROME WITH PARALYSIS

1	Polio I	—	256
2	Polio I	16	128
3	Polio I	4	128
4	Polio I	4	16
5	Polio I	16	256
6	Polio III	4	256

* Serums collected during the acute and convalescent phases of illness were tested for antibodies in standard tissue culture neutralization tests. Titers are expressed as reciprocals of the dilutions of serum causing complete inhibition of growth of the viruses 48 hours after controls had become positive.

COXSACKIE GROUP A VIRUSES

Only a few of the more than 20 types of Coxsackie group A viruses have been shown to cause the aseptic meningitis syndrome. Coxsackie virus type A9 may cause simultaneous aseptic meningitis and a non-specific maculopapular erythematous rash. Muscular paresis of a transitory sort occurs rarely. Occasionally, aseptic meningitis may occur in a patient who has, or recently has had, another manifestation of group A virus infection, i.e., herpangina, a vesicular type of pharyngitis.

COXSACKIE GROUP B VIRUSES

All five members of the Coxsackie group B viruses have been shown to cause aseptic meningitis. These viruses at one time or another have been responsible for large epidemics of the disease. These viruses also frequently cause pleurodynia or epidemic chest pain. Pleurodynia in a patient with aseptic meningitis or a history of contact with an individual with chest pain would suggest the diagnosis of Coxsackie group B infection. In addition, patients with Coxsackie group B virus infection tend to have severe localized or generalized myalgia and retro-orbital pain. The course of the disease is characterized by remissions and exacerbations of symptoms. In rare instances, a patient

may have paralysis as a result of Coxsackie group B virus infection.

Case 2. A 14-year-old boy was admitted to University Hospitals on August 28, 1958. He had been well until four days prior to admission, when he had developed a severe frontal headache and a mild rhinorrhea which was serous in nature. The headache persisted until the time of admission. On the day he entered the hospital, his temperature was taken for the first time and was found to be 103.2°F.

The boy's father had been ill with a severe headache during the same period, but had had no meningeal symptoms. The patient had not received immunizations against poliomyelitis.

Physical examination on admission revealed a temperature of 103°F. The child appeared to be ill and experiencing discomfort. The neck was rigid, and the Kernig and Brudzinski signs were positive. The peripheral blood contained 11,000 leukocytes, 71 per cent of which were neutrophils. The cerebrospinal fluid contained 43 cells per cubic millimeter, 40 per cent of which were neutrophils. The concentration of proteins was 80 mg./100 ml., and of sugar 62 mg./100 ml. The erythrocyte sedimentation rate (Westergren method) was 27 mm./hr.

The patient remained febrile during the first two days of his hospitalization. Following the disappearance of fever on his third hospital day, the meningeal signs also subsided. During the hospitalization, the child remained quite irritable and complained of headache and abdominal pain.

Twenty-four hours after his discharge from the hospital, he experienced a recurrence of fever, headache and mild meningeal signs. These symptoms gradually subsided during the next 36 hours. The patient was seen in follow-up clinic one month after discharge, and no sequela of the illness could be found.

From the washings of the throat and anal swabs obtained during the first hospitalization, a virus was isolated in monkey-kidney cell cultures which was subsequently identified as Coxsackie B5 virus. Studies of the serums collected during the acute and convalescent phases of the illness showed a rise in antibodies against this virus (Table 5).

This case illustrates a frequent occurrence in patients with infections due to the Coxsackie B viruses. The patient may suffer an acute recurrence of symptoms during an otherwise uneventful convalescence. Examination of cerebrospinal fluid at such times may reveal a return of pleocytosis.

THE ECHO VIRUSES

Certain members of the ECHO group of viruses may cause aseptic meningitis. Some of these agents have been responsible for large epidemics of this syndrome. ECHO viruses types 4, 6, 9 and 16 may cause simultaneous rash. Here again, history of contact between the aseptic meningitis patient and an individual with an exanthematous illness would

suggest an ECHO virus infection. Certain members of this group have also been reported to cause transitory paralysis on rare occasions.

Case 3. An eight-year-old girl was admitted to University Hospitals on August 24, 1957. She had a history of headache, fever and tenderness of the neck for the previous five days. Fever of up to 102°F. had been documented. On the day before admission, she had complained of pain in the back.

The girl had had no known contact with an ill person. She had received three injections of poliomyelitis vaccine, appropriately spaced.

On physical examination, the patient was found to be acutely ill, but was cooperative and ambulatory. Her temperature was 101°F. There were only minimal signs of meningeal irritation.

The leukocyte count in the peripheral blood was 9,000, and the differential showed 60 per cent polymorphonuclear cells and 30 per cent lymphocytes. The erythrocyte sedimentation rate (Westergren method) was 30 mm./hr. The cerebrospinal fluid contained 67 cells per cubic millimeter. There were 45 per cent polymorphonuclear cells and 55 per cent lymphocytes. The protein content was 58 mg./100 ml., and the glucose content was 47 mg./100 ml. The diagnosis of aseptic meningitis was made, and treatment was symptomatic.

The patient improved gradually and was discharged seven days later. At the time of discharge, the patient was completely well.

From the washings of the throat and from anal swabs, a virus was isolated in monkey-kidney cell cultures. The virus was identified as ECHO virus type 8. Studies of serums collected during the acute and convalescent phases of the illness demonstrated a rise in antibodies against this virus (Table 5).

The history as given was compatible with the diagnosis of meningitis. Examination of the cerebrospinal fluid revealed findings quite consistent with the impression of viral meningitis. This was the first reported instance in which ECHO virus type 8 had been isolated from a patient with aseptic meningitis.

TREATMENT

The treatment is purely symptomatic when the diagnosis is certain. The meningeal diseases do not have residua, even though mild paralysis may occur during the acute phase. Often, it is impossible to exclude bacterial meningitis early in the course of the disease, however, and in such instances appropriate intensive antibacterial therapy may have to be employed until the correct diagnosis becomes apparent. An etiologic diagnosis cannot be established during the acute stage of the disease in routine practice, since it requires isolation and identification of the virus and serologic evidence in acute and convalescent sera of a rise in antibody titer to the suspected viral agent. Viral isolation is expensive and time-consuming, and requires an elaborate special laboratory if throat washings, blood, cerebrospinal fluid and stool spec-

imens are to be studied properly. Therefore, in all practicality, the physician must rely mainly upon his clinical judgment.

DISCUSSION

The time has come for us to abandon the terms *flu* and *virus infections* and let the Madison Avenue admen have them. They should no longer have a place in diagnostic parlance, for the diagnosis of an illness in such terms is not descriptive. The use of these words is usually a mere excuse for thinking, and represents nothing more scientific than the diagnostic judgments of our grandmothers or of the patient himself. The terms no longer have specific medical meaning. Although it is true that some viral disease syndromes share many symptoms and signs, they also have tell-tale differentiating peculiarities. It is essential for the physician to make a careful and earnest attempt to distinguish the system that is involved if he is to make an intelligent diagnosis. If he pays attention to epidemiology, to the presence or absence of infection in the patient's family contacts and to certain symptoms and signs, he should frequently be able to recognize the "clues" which indicate that central nervous system infections due to one of the enteroviruses other than poliomyelitis is abroad in the community.

The authors appreciate the assistance of Patricia Nell in reviewing the records, and the technical assistance of David Wilken, Robert C. Smith and Marcia Langmack.

INDUSTRIAL HEALTH MEETING IN CEDAR RAPIDS

"Rehabilitation of the Cardiac in Business and Industry" will be the theme of an area Heart Association session at the Roosevelt Hotel, in Cedar Rapids, on Wednesday afternoon, November 4. Dr. Ralph D. Hunting, of Cedar Rapids, president of the Cedar Valley Heart Council, has announced that it will start at 12:15 p.m. with a luncheon.

The guest speaker for the meeting will be Dr. George A. Helmuth, of Milwaukee, medical director of the Work Classification Unit at Marquette University. About 700 invitations have been issued to doctors, industrial management representatives, labor leaders, service agency personnel and others.

An afternoon symposium will include the following: Homer V. Buescher, Iowa City, personnel manager for Procter & Gamble Company, "How the Employer Views the Cardiac"; Dr. Harold Margulies, Des Moines, "Evaluation of the Cardiac Worker"; Earl Jones, Oskaloosa, State Industrial Commissioner, "Medicolegal Aspects of Cardiac Employment and Financial Responsibility Laws"; Ben Henry, Des Moines, national representative of the AFL-CIO, "How Organized Labor Looks at the Cardiac"; and Warren VanEschen, Cedar Rapids, case supervisor for the Office of Vocational Rehabilitation, "Practical Experience With Cardiac Rehabilitation Problems."

Our Responsibilities in Childhood Urology

ROBERT LICH, JR., M.D.

LOUISVILLE, KENTUCKY

UROLOGIC PROBLEMS in children are not uncommon. However, as compared with the urologic disturbances in other age groups, they are quite often responsible for obscure symptoms. It is important for the physician to be alert to this possibility, since only in this way can devastatingly progressive urologic diseases be interrupted in infancy and childhood, before irreparable damage occurs. Furthermore, the physician must be ever mindful that anomalies of the genito-urinary tract are commonly associated with other congenital deformities, and above all that malformations of the urinary tract may be multiple. One sometimes corrects an obvious anomaly and then finds another group of symptoms becoming manifest—symptoms that reflect additional pathology which may be harder to correct than it would have been if both disturbances had been apparent initially. In the interests of clarity and emphasis, I shall cite some clinical instances.

It is well known that a portion of obstructive uropathies in children may manifest gastro-intestinal symptoms. Also, an acute febrile urinary tract infection in an infant will often lead to sharp gastro-intestinal distress, including vomiting and diarrhea. The presumable reason for this interchange of symptomatology is thought to be their common innervation. The diagnostic solution can be nothing other than to keep these facts in mind and consider the urinary tract as a potential culprit in every pediatric symptom complex that either defies diagnosis or resists treatment.

A most outstanding example was a child three years of age who was taken on occasion with violent gastro-intestinal upsets associated with diarrhea and alarming fever. During each attack, there appeared to be generalized abdominal pain. The gastro-intestinal tract had been studied repeatedly and found unquestionably free of pathology. There had been rather consistent hematological variations during these attacks, and on more than one occasion an enlarged spleen had presumably been palpable during the height of an attack. Splenectomy was discussed as a possible future undertaking.

During a purely social, curbside conversation, one of the boy's parents revealed to me that polyuria consistently preceded abrupt, spontaneous cessations of these increasingly numerous and severe attacks. The possibility of an intermittent

acute obstructive hydronephrosis was then investigated, despite the absence of pyuria or any disturbance referable to the urinary tract. A massively hydronephrotic left kidney was found and removed, and the youngster had permanent relief, general weight gain and the spontaneous appearance of robust health during the ensuing years.

Another youngster, a frail child of five years who had suffered repeated mild gastro-intestinal upsets since birth, was seen in consultation. The child had always been unable to digest food properly, and several gastro-intestinal series had led physicians to suspect a digestive-system allergy. That possibility was then vigorously studied, but though many such sensitivities were discovered, the child's avoidance of the indicated types of food did not afford relief.

A urologic study, even though the urine was normal and the renal function tests were unremarkable, demonstrated a moderately large hydronephrosis due to a congenital obstruction at the ureteropelvic junction. A corrective operation permitted adequate renal drainage, and the gastro-intestinal complaint disappeared completely. Afterwards the youngster experienced a spectacular improvement in general health.

These two cases could easily be duplicated many times over by any urologist. In one instance the child was deprived of a kidney, and in the other the difficulty was relieved by means of less radical surgery, but both patients were restored to relatively complete health. In many other instances, however, children have been allowed to become renal cripples when an obscure process went untreated until correction became impossible and the abnormality became bilateral.

EARLY DIAGNOSIS IS ESSENTIAL

What is the answer to this problem in pediatric urology? Obviously, it is early diagnosis, and early diagnosis is dependent upon the consideration of the urinary tract in any diagnostic problem, even when the possibility of urinary implication is remote. But even more important is the performance of a complete anatomical and functional urologic study. When the precursory study affords an obvious diagnosis, tissue or organ salvage is seldom possible, and thus if we are to save irreplaceable tissue, we must accurately demonstrate early changes. It is the diagnosis and not the treatment that is of supreme importance, and the master physician in such instances is the one who con-

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siders the possibilities irrespective of the obvious implications.

To demonstrate urinary-tract pathology in its incipient and reversible state requires meticulous attention to every detail. This must include an excretory (intravenous) urogram and a detailed cystoscopy with urography, except possibly in very young infants. The urograms must provide a distinct outline of the entire calyceal architecture, the renal pelvis and entire ureter. One is never justified in assuming that the calyx that does not visualize is normal, or that the portion of the ureter which is obscure is free of pathology. A film or a series of films must reveal the entire urinary tract in every detail if the study is to be considered diagnostic. Urine studies must include function tests of both excretion and concentration types, in addition to the usual blood study for azotemia.

In addition, there are many special applications of urography, but such technicalities hardly fit into this basic discussion. It is imperative that the fundamental dictate of urology be fulfilled in each instance—namely, that there is no place in urology for exploratory surgery. Remember that urologic surgery is fundamentally *corrective* surgery, and unless an anatomical and functional diagnosis is available at the operating table, the surgeon cannot possibly undertake logical functional correction.

To amplify the foregoing statements, I shall summarize the cases of several patients. In each instance, the urologic success was dependent upon a thorough urologic survey, and failure in any one step might well have been disastrous, or at least needlessly and inexcusably costly to the patient in irreplaceable functional tissue.

A child of some six years of age was known to have had recurrent urinary-tract infections over a period of several years. These episodes had been associated with fever, dysuria and lassitude. An excretory urogram revealed a duplicated kidney on the right, but there was no evidence of an obstructive uropathy. This study lulled the physician into a false sense of security, but as the attacks became both more frequent and more severe, and when bacteriologic sensitivity tests proved valueless, the child was referred for further study. The retrograde study produced a film similar to the excretory urogram. However, when additional dye was put into the lower portion of the reduplicated right kidney, a marked hydronephrosis and hydroureter were demonstrated, the resection of which halted this little patient's episodes of infection.

A 10-year-old child with apparent bony deformities and an obvious lack of bone density was referred to an orthopedic hospital for treatment of his obvious orthopedic difficulty. Studies of the bone structure revealed marked alterations from normal, but the blood and urine were normal and

there was no clinical evidence of azotemia. The history contained no mention of any urinary difficulty or abnormality, and none was recognized by either the physician or the nursing staff on the orthopedic service. But after the child had been transferred to the pediatric division, a routine investigation of the blood chemistry revealed a marked nitrogen retention. Up until that time, the fixed specific gravity of the urine had gone unnoticed.

A detailed urologic survey promptly revealed a far-advanced renal rickets secondary to a congenital obstruction of the bladder outlet and a residual urine of more than 300 cc., with marked secondary upper urinary tract dilatation and dysfunction. Protracted continuous vesical drainage corrected the chemical picture in the blood, and an eventual surgical correction of the obstructed vesical outlet salvaged much of the child's renal tissue. This child will have a lifetime of renal dysfunction, but still will be a productive citizen and can live out a relatively normal life span.

The need for careful evaluation and for a fundamental understanding of urologic procedures is illustrated in the following patient. The child was referred because of enuresis. Historically, according to the mother's report, the case was typical of enuresis except as regards daytime urinary leakage. Inactivity, rather than physical activity, had been associated with urine leakage during the patient's waking hours.

Cystoscopically, there was no abnormality of the bladder, its outlet or the urethra. Retrograde urography revealed a somewhat depressed left kidney with an abnormal renal axis—i.e., a line drawn through the lowermost and uppermost renal calyces would not have intersected the thoracic spine when projected cephalad. The possibility of a left renal duplication with an ectopic ureteral orifice was considered, but none was found, and the genitalia were normal. An excretory urogram, done in the routine manner, was normal except for the previously described depressed and rotated left kidney. A delayed film, six hours after the urogram, suggested a sphere of dye above the left kidney, and 24 hours later another showed a round density in the same place. It was apparent that this was a duplicated kidney and that the upper segment was markedly hydronephrotic, but the ectopic ureteral orifice remained unfound.

Resection of the hydronephrotic renal segment and ureter revealed the orifice to be in the area between the urethra and the vagina. It was of such size that nothing could be inserted to demonstrate its caliber.

In this clinical instance, we have an example of the importance of delayed excretory urograms, particularly in children. In the usual intravenous urogram, the true picture is missed. The first few

trickles of dye down an atonic ureter may not reveal its pathology, but the delayed film will clearly demonstrate its marked atonic dysfunction and indicate the need for surgical correction.

CONCLUSION

Needless to say, the many aspects of pediatric urology cannot be encompassed in this brief presentation. Instead, it has been my purpose to present just the essentials, namely the need for positive preoperative functional and anatomical diagnosis, and the importance of early diagnosis.

The urologist diligently undertakes to diagnose and correct childhood urinary anomalies, and to do so he searches for the initial symptoms that make early diagnosis possible. Only in this manner can pathologic processes be interrupted at the stage of functional reversibility, and only thus can maximal tissue be salvaged.

In these ways the urologist cooperates with the general practitioner and the pediatrician in fulfilling a supremely important function, that of providing handicapped children an opportunity to live full and active lives.

State University of Iowa College of Medicine Clinical Pathologic Conference

SUMMARY OF CLINICAL FINDINGS

A 59-YEAR-OLD MAN was admitted to the University Hospitals from another hospital after a two-month illness that had begun as "flu" and had been followed by fatigue, "pleurisy," nervousness, insomnia and a weight loss of 18 lbs. Although born in Russia, the patient had lived in Iowa since 1928 and had worked in a grain-processing factory where he had had some minimal exposure to sterilizing chemicals. He had not traveled outside Iowa. He drank from one to four bottles of beer per day. Recent previous treatment had consisted of some oral broad-spectrum antibiotics.

The patient was well-developed and alert. His temperature was 101.2°F., orally, and during the next six preoperative days, his highest recorded temperature was 103°F. There was a sharp-edged mass in the right upper quadrant, which extended 10 cm. below the costal margin and moved with respiration. The blood pressure was 106/70 mm. Hg. Neither enlarged peripheral nodes nor a palpable spleen could be observed.

Recent roentgenograms from another hospital showed no intrinsic lesion within the alimentary tract. An elevated right hemidiaphragm with 1 cm. of motion respiration was observed. Retrograde and intravenous pyelograms revealed a depressed right kidney, with flattening of the upper calyces.

The BUN was 8 mg. per cent, creatinine 1 mg. per cent, BSP retention 11 per cent, and serum proteins totaling 6.9 Gm. with an A/G ratio of 3.7/3.2. The alkaline phosphatase was 2.2 mg. per cent, and the van den Bergh 1 minute and 30 minute were 0.2 and 0.8 mg. per cent, respectively. The bone marrow showed mild hyperplasia of the myeloid series. The hemoglobin was 11 Gm. per cent, and the white blood cell count was 13,300/cu. mm., with 69 per cent segmentals, 31 per cent

lymphocytes and 4 per cent monocytes. The sedimentation rate was 58 mm. in one hour.

After surgical and urological consultations, the patient was transferred from Internal Medicine to Surgery. At that time, trophoblasts in the stool resembling *E. histolytica* were found, and emetine was started.

In the operating room, a needle biopsy was carried out, exploring the right upper abdomen and retroperitoneal area anteriorly and posteriorly, and from each site bloody-grayish material was obtained. The patient was explored eight days later from an anterior approach. More material of the same type was encountered. The abnormality appeared to be confined within the liver.

A transient episode of shock occurred postoperatively, but it responded to a blood transfusion. The following day, the patient's hemoglobin was 14.7 Gm.

He lived for 11 days, and his clinical course was marked by lethargy, vomiting, feeble pulse, a gradually increasing abdominal girth, and later, distention of the abdominal veins. During the final two days of life, he was given Neomycin and a low-protein, high-carbohydrate diet.

SUMMARY OF CLINICAL DISCUSSION

Dr. Frederick D. Staab, Surgery, Iowa City VA Hospital: I've been looking over this protocol for some time, and I have the impression that there must be a red herring in it. On the surface, the case seems rather obvious, but I'm sure it can't be that easy since Dr. Hickey has selected it for a clinical pathologic conference.

The history is that of a 59-year-old man who had an illness which had been diagnosed as "flu" some two months prior to admission. He had fatigue, pleuritic pain, nervousness, insomnia and a weight loss of 18 lbs. A loss of 18 lbs. has to

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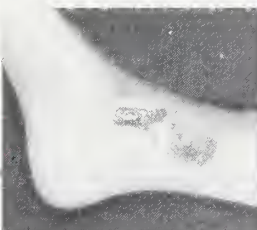
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come from something. Either he wasn't eating, or he was losing material from his body in some fashion, and I'd like to ask whether he had any gastrointestinal symptoms, any abdominal pains, diarrhea, nausea or vomiting.

Dr. Robert C. Hickey, Surgery: He had no diarrhea and no vomiting.

Dr. Staab: He had had no history of gastrointestinal difficulty in the past? He had had no abdominal pain associated with this so-called flu? Any epigastric pain?

Dr. Hickey: He had a burning epigastric pain.

Dr. Staab: He did have epigastric pain throughout this two-month period. Was this pain in any way relieved by medication?

Dr. Hickey: Not that I'm aware of.

Dr. Staab: He didn't take Roloids, Tums or other things of that nature?

Dr. Hickey: There is no notation regarding Tums or Roloids. He didn't take either of those.

Dr. Staab: Did either milk or food provide him any relief from this epigastric difficulty?

Dr. Hickey: No relief.

Dr. Staab: Was the pain constant, or was it periodic?

Dr. Hickey: Relatively chronic, deep-seated and burning. It was neither better nor worse at night as compared with the day.

Dr. Staab: Did he ever have any nausea or vomiting with this pain?

Dr. Hickey: He had some nausea just prior to his vomiting.

Dr. Staab: Did he have jaundice?

Dr. Hickey: No.

Dr. Staab: We see that the patient was born in Russia, and apparently he lived there until 1928. This point may be significant for the history and the account of the physical examination suggest that his trouble was mainly in the region of the liver. He might have had some difficulty with Echinococcus infection, a malady that may have begun while he was still in Russia, where it is prevalent, but may not have become manifest until this time. Also, the history states that the patient worked in a grain-processing factory where he underwent some minimal exposure to sterilizing chemicals. The nature of these substances has not been revealed, but it can be presumed that there shouldn't be any marked hazard in the use of these chemicals. But perhaps I am presuming too much. What were they?

Dr. Hickey: They were caustic chemicals used to sterilize pieces of equipment. They were not considered hepatotoxic.

Dr. Staab: There were no vapors?

Dr. Hickey: No.

Dr. Staab: Yet, there is the possibility of some damage to the liver as a result of his association with chemicals.

He had not traveled outside the State of Iowa,

but that fact doesn't mean much, since we have plenty of infections within our own state. He drank from one to four bottles of beer a day, but apparently was not an alcoholic. He had been treated at home with a broad-spectrum antibiotic. Apparently, the previous diagnosis was that of an infectious disease that warranted treatment with antibiotics.

On his arrival here, he was well-developed and alert. He had a febrile course in the hospital, his temperature ranging from 101° to 103°F. Was this a relatively sustained fever, or was it spiking?

Dr. Hickey: Sustained, with some peaks.

Dr. Staab: A sharp-edged mass in the right upper quadrant extended 10 cm. below the costal margin and moved with respiration. It must have been liver or at least an intraperitoneal mass that would move with respiration. Presumably it was liver, since it was in the right upper quadrant and had a sharp edge. His blood pressure was relatively normal, although some might consider it hypotensive. There were neither large peripheral nodes nor an enlarged spleen. Recent roentgenograms from another hospital revealed no intrinsic lesion within the alimentary tract.

Did he receive a gastrointestinal series and/or a colon series?

Dr. Hickey: Both.

Dr. Staab: Were any x-rays done here—particularly a chest film?

Dr. Hickey: The chest film was essentially normal.

Dr. Staab: That finding tends in some degree to rule out the possibility of echinococcus infection as a cause for enlargement of the mass in the right upper quadrant. With an echinococcus cyst, there very often are associated lesions within the lungs which may or may not be calcified, and also similar calcification within the liver.

The laboratory work revealed a BUN and creatinine that were normal, and a BSP test that for all practical purposes was normal. Serum proteins were within a normal range, but there was a tendency toward equalization of the albumin-globulin ratio, a finding which may or may not have been significant. The alkaline phosphatase was normal, and both van den Bergh tests were normal. All these findings tend to diminish the possibility of primary parenchymal liver disease, such as cirrhosis in any degree. However, it is possible to have a fair degree of cirrhosis with essentially normal tests such as these.

I should like to ask whether a urinalysis revealed any sugar in the urine, and whether blood sugars were done and whether the man showed any bronzing of the skin.

Dr. Hickey: The man had no bronzing of the skin. The urinalysis was essentially within normal range.

Dr. Staab: That answer tends to eliminate the

possibility of hemochromatosis in this man. The bone marrow, as far as I'm concerned, was essentially normal. The hemoglobin of 11 Gm. wasn't too far off. The patient was a little bit anemic, but that condition would be compatible with the previous history of two months of uppergastrointestinal distress. He had a white blood count of 13,300, which is abnormal. It is suggestive, of course, of some inflammatory disease. While it is within the range of an abscess, one would expect a patient with an abscess to have a higher white blood cell count than this. The differential was not particularly abnormal. There was no marked increase in the number of band cells seen on differential. The segmented polymorphonuclears were not in an undue proportion, although they might have been a little elevated.

The big feature was the elevated sedimentation rate of 58 mm./hr.

After surgical and urological consultations, the patient was transferred from Internal Medicine to Surgery. At that time, trophozoites were found in the stools resembling *E. histolytica*, and emetine was started. By and large, as far as I am concerned, the demonstration of trophozoites of *E. histolytica* indicated that the man had an active infection from that organism. Cysts may be found in many people, and such individuals may be termed carriers with no active disease. But, I guess, if they have the ameboid stage of the organism, they have active infections.

Apparently the attending physicians felt the same way, for they started therapy with emetine. It seems, however, that they were not entirely successful, for the patient was taken to the operating room, where a needle biopsy was carried out, exploring the right upper abdomen and the retroperitoneal area anteriorly and posteriorly. From each site, a bloody, grayish material was obtained.

This bloody, grayish material seems not to have corresponded with the so-called chocolate material obtained from an amebic cyst or abscess, though one gets the impression that the surgeons had something of that sort in mind. An amebic abscess in this area would characteristically contain a chocolate-like material in which there might or might not be trophozoites of *E. histolytica*.

It is also possible that the material came from a subdiaphragmatic abscess lying between the liver and the diaphragm, secondary to a perforation of a hollow viscus—possibly duodenal ulcer or possibly gallbladder. A subdiaphragmatic abscess, however, is more compatible with the perforation from a duodenal ulcer.

Eight days later, the patient was explored through an anterior approach, and more of this same material was encountered. I should like to know where this was encountered. Was it above, below or within the liver?

Dr. Hickey: Within.

Dr. Staab: Was the approach through the superior surface of the liver or through the inferior?

Dr. Hickey: Superior.

Dr. Staab: You are sure that it was within the liver? You don't mean simply that the liver was right there and you needled the area, and you do mean that you clearly visualized the superior margin of the liver?

Dr. Hickey: Yes.

Dr. Staab: What you have said tends to substantiate the belief that this man had a lesion confined within the liver substance. If these findings are true, then we must disregard the possibility of its being an infradiaphragmatic abscess as the result of a perforation of a hollow viscus within the abdomen, and the field is narrowed down considerably.

Lesions that occur within the liver substance can be inflammatory or neoplastic. If such a lesion is inflammatory, it can be an echinococcus cyst. It would be extremely unusual for an echinococcus cyst to give forth fluid of the sort that has been described unless it were secondarily infected, and in this case there apparently was no cause for secondary infection. The material aspirated from an echinococcus cyst ordinarily is relatively clear. Turning our attention back again to amebic abscess, we note that the findings seem to be rather characteristic. This man had trophozoites in his stools—a substantiating finding. The laboratory work has tended to discredit the possibility of this man's having had a primary liver disease. Were there any changes in these studies at a later date?

Dr. Hickey: There were no other liver function studies.

Dr. Staab: Thus, the possibility of this man's having primary liver disease seems to have been eliminated—that is, hepatitis in which the liver parenchymal cells are involved with an inflammatory or severely scarred process of some standing. But there remains a possibility that this man had a primary liver neoplasm, and such growths can be quite large, quite extensive and possibly growing rapidly enough to degenerate in the middle and allow for the aspiration of the fluid that was recovered. Yet a high percentage of liver neoplasms are secondary to hemochromatosis or cirrhosis, or at least to prolonged inflammatory insults to the liver or bile-duct systems. We have no evidence that this existed, but the possibility of a primary liver neoplasm hasn't been eliminated.

The possibility was entertained that other conditions such as congestive failure had caused enlargement of the liver. However, there is nothing to suggest anything of the sort, and the aspiration of fluid is incompatible with that single condition, although a fluid-producing condition could have been superimposed upon it.

A transient episode of shock occurred. May I

ask whether you merely needed the mass again at the time of the exploration?

Dr. Hickey: Yes.

Dr. Staab: And then you closed the abdomen without drainage?

Dr. Hickey: Yes.

Dr. Staab: The subsequent course of this individual was marked by a transient episode of shock which responded only temporarily to a blood transfusion, and from there on was downhill, terminating of course in death. There was a noticeable increase in abdominal girth.

I presume that this man showed signs of peritonitis postoperatively.

Dr. Hickey: No.

Dr. Staab: He didn't? Well, I am postulating that this abscess (from whatever cause) leaked through multiple puncture holes, contaminating the peritoneum and stirring up a chemical peritonitis if not an actual inflammatory peritonitis which resulted in the increased abdominal girth. This may have been due either to dilated bowel which was atonic as a result of inflammation, or to rapidly increasing fluid. This increase in fluid could be due also to the obstruction of the portal system secondary to the compression of the portal vein or to liver failure.

As I have said, this case appeared very obvious on the surface. I shall go along with my first impression—an amebic abscess of the liver that responds in itself rather poorly to emetine. Emetine is quite satisfactory in destroying the trophozoites when they are present within tissue so that the emetine can get into contact with them, as in amebic hepatitis. It is not particularly effective, or any more than slowly so, in controlling an amebic abscess.

I am postulating that the patient's primary disease was amebiasis with a liver abscess. The liver abscess following the surgical intervention leaked into the peritoneal cavity, giving a peritonitis and producing the increased abdominal girth, the shock and the general downhill course.

As I have mentioned, the possibility that this was within the liver has eliminated the chance of diaphragmatic abscess. I have not discussed the possibility of pyogenic abscess, for apparently all of the patient's symptoms were related to the upper abdomen. It isn't often that one has a pyogenic abscess within the liver secondary to upper-abdominal disease. That condition more commonly arises from difficulties within the lower quadrants. Besides, the patient didn't seem in general to have been toxic enough to have a pyogenic abscess *per se*. The aspiration of fluid tends to eliminate neoplasm to some degree, for it isn't common for these neoplasms to have necrotic centers filled with liquid.

Dr. Hickey: Dr. Staab has given us a very complete presentation of a difficult problem.

The serology was negative. The protocol says

that trophozoites resembling *E. histolytica* were found and emetine was started. The next sentence should have said that this finding was not confirmed.

Would you care to ask any further questions about the biopsy performed in the operating room?

Dr. Staab: Did you recover any material in your needle aspirations?

Dr. Hickey: We recovered material.

Dr. Staab: Was it *E. histolytica*?

Dr. Hickey: It was not compatible with *E. histolytica*.

Dr. Jack M. Layton, Pathology: Let me disclose what the biopsy showed, and then Dr. Staab can take it from there as the rest of us had to do.

Dr. Staab: I should like to know. I presumed, erroneously, that only this liquid material was obtained. Was there liver material?

Dr. Layton: There was tissue. The first biopsy showed tissue with very cellular anaplastic cells devoid of any definite pattern. The cells were so immature and undifferentiated that we couldn't make any precise statement as to what type of tumor they came from, although the diagnosis was malignant neoplasm. When the next biopsy was taken, a similar type of tissue was obtained, and it was reported as "anaplastic malignancy, probably carcinoma," but we weren't entirely sure of that diagnosis. This is what the surgeons had to go on.

Dr. Staab: This again brings up a point which I should have discussed: that the liver is the filtering ground for all metastases from neoplasms in other areas, including the lung. Apparently the chest film was clear, but that means nothing relative to a primary in the lungs. The primary could also have been in the esophagus. The apparent normality of the gastrointestinal system on x-ray does not mean that there couldn't have been a lesion within the esophagus which metastasized to the liver. I doubt seriously that there was any lesion within the kidney, even though it was displaced. The displacement was probably a consequence of the liver enlargement. I seriously doubt that this was secondary from a kidney neoplasm, for there was no particular distortion of the kidney calyces, and there usually is with a lesion primary in the kidney. There is a possibility of its being an adrenal tumor, but I would rule that out. The man should have had many more gastrointestinal symptoms if this were to have arisen from the lower part of the gastrointestinal tract.

The most logical site of a primary neoplasm causing such an extensive metastatic mass in the liver would seem to be the lung, the esophagus or at least the upper gastrointestinal tract or the pharynx, for these occasionally are responsible for massive lesions within the abdomen.

There is one other neoplasm that I haven't mentioned. It is malignant melanoma, which of course will cause tremendous enlargement of the liver

and occasionally can grow rapidly enough to cause necrosis within its center. On the basis of the history, physical examination, laboratory studies, x-rays and biopsy, however, I should say that this patient probably had a primary hepatoma that was growing very rapidly.

Dr. Layton: At autopsy, pitting edema was observed in both lower legs and in the flanks. The abdomen was protuberant, but neither ascites nor pleural effusion was encountered.

The liver was strikingly enlarged, weighing 5,060 Gm. (normal = 1,550 Gm.) and displacing the diaphragm upward and the right kidney downward and laterally so that the lower pole was located at about the level of the iliac crest. The right lobe of the liver was almost completely replaced by a large, round neoplasm 20 cm. in diameter, and only a thin rim of compressed hepatic tissue remained at the periphery. The tumor was sharply demarcated from the left lobe of the liver. The neoplasm was soft, friable, and mottled red and yellow with streaking. Foci of necrosis and hemorrhage were apparent. Neoplastic tissue had invaded and replaced the walls of hepatic veins, and had permeated these veins and the inferior vena cava up to the level of the diaphragm, at which level the vena cava was completely obstructed by tumor. The neoplasm was composed of malignant endothelial cells which, in the process of invasion, either lined preexisting channels or formed new ones. The left lobe of liver was the site of extensive centrilobular necrosis and fibrosis.

Severe, confluent necrotizing bronchopneumonia was present in both lungs, but most severe in the lower lobe of the right lung. Small branches of pulmonary vessels contained emboli of tumor cells. Stomach contents were found in the tracheobronchial tree and in the small branches extending peripherally from it.

The stomach was distended by gas and 1,700 cc. of turbid, dark reddish-brown fluid. A moderate degree of esophagitis was present. Heterotopic pancreatic tissue was found in the subserosa at the gastro-duodenal junction area, and an annular pancreas encircled the duodenum in the region of the duodenal loop, without obstructing it.

Incidental findings included mild enlargement of the prostate gland, mild degenerative changes in the renal tubules and adrenals, and congestion of the spleen.

NECROPSY DIAGNOSES

Malignant hemangioendothelioma of liver, with extension into the hepatic veins and inferior vena cava, and emboli to the lungs.

Severe, confluent necrotizing bronchopneumonia

Aspiration of gastric contents, massive

Esophagitis, moderate

Annular pancreas, with no evidence of duodenal obstruction

Heterotopic pancreatic tissue in the wall of the pylorus and the duodenum.

We would, therefore, consider this case to have been a malignant hemangioendothelioma of the liver. The neoplasm has also been designated a hemangiosarcoma or Kupffer cell sarcoma of the liver. It is a malignant tumor of vascular origin arising in the liver.

It is of interest that most of this man's edema was of the type that one could encounter with obstruction of the inferior vena cava, rather than obstruction of the portal venous system.

His fever may be attributed to the very severe confluent necrotizing bronchopneumonia bilaterally.

The immediate cause of death was massive aspiration of gastric contents.

Dr. Hickey: Dr. Hamilton also saw this patient, and perhaps he might comment on the preparation of a patient for possible surgical drainage of an amebic abscess—the entity we strongly considered in this case. But first, I think we might comment here on the reason for the patient's second trip to the operating room. When he was first taken there and when the aspirations were carried out, he was positioned on his side and needles were put into what we thought was the abscessed area, both anteriorly and posteriorly. We obtained the peculiar material which has been described and which we were unable to identify further than to be sure it represented some type of malignant tumor.

The second operative procedure, performed through a short incision, was undertaken so that we might find what we were dealing with. We had begun to suspect that our patient had a primary neoplasm within the liver, and we wished to learn the extent of the lesion and to find out whether it could possibly be considered for resection. We thought it might lend itself to resection at the second exploration. As Dr. Layton has said, it was limited entirely to the right lobe of the liver, and though the resection of such a tumor has been performed elsewhere, we haven't attempted the procedure at University Hospitals. Such surgery, I might add, is attended by a rather high mortality rate.

As Dr. Staab has commented, with neoplasms within the liver the difficulty lies in distinguishing primary from secondary lesions. The latter are extremely common; indeed the liver is probably the organ that most commonly receives metastatic deposits. Primary lesions are relatively rare.

I have one slide (Figure 1) that gives some idea of the distribution of primary neoplasms within the liver. The incidence is greatest in the southern portions of Africa and the southeastern portions of Asia. Actually, liver cancer is relatively rare within the United States and the other Caucasian countries. The reason for this peculiar distribution is not entirely clear. It may have something to do with infestation, and it may be a result of malnutrition. Certainly we know that, with cirrhosis of the liver,

liver cancer is increasing in this country. I understand that in Los Angeles the incidence of cirrhosis has been increasing since the Volstead Act was repealed, and that liver carcinoma is more frequent. It is about twice as frequent in diabetics with associated liver damage as it is in the normal population. Then, as Dr. Staab mentioned, about 7 per cent of people with hemochromatosis ultimately develop carcinoma of the liver.

The type of cancer of the liver that afflicted the patient whom we have been discussing today is extremely rare. The most frequent is the hepatocellular type, and that of bile-duct origin is somewhat less frequent. This type that we have been talking about this afternoon is actually extremely infrequent. Those that have been diagnosed have been associated, in some instances, with exposures to various chemicals and also to Thorotrast. We made inquiries by mail as to this patient's chemical exposure and found that it had been very minimal.

Now, let me return to our thoughts after the second operation. We went to Dr. Gius's laboratory, and with medical students Paul Willis and Paul Randels, we injected a liver with plastics. Four colors were used, and the tissues were digested away, leaving a cast. The yellow dye was injected into the inferior vena cava. The blue dye was injected into the portal system. The red dye was injected into the artery, and the green dye was injected into the bile ducts.

To attempt to resect the right lobe of the liver is an extremely hazardous undertaking. The surgical resection would depend almost entirely upon the control of the blood vessels, and the exercise I have described was an attempt to learn the vascular pattern. The problem, I repeat, is one of vascular control—largely in caring for the inferior vena cava. It was obvious that control of the very short vessels as they enter the great one at several levels would be difficult to maintain, and in addition, to insure that one was not ligating the venous return from the left side would demand alertness.

This patient's course was gradually downhill over the next 11 days, and we thought he was entering a type of liver failure. Therefore, the medications previously mentioned were started during the last two days of his life.

Now, Dr. Hamilton, will you comment on the preparation of a liver abscess patient for surgery?

Dr. Henry E. Hamilton, Internal Medicine: I think Dr. Staab did an excellent job of expounding this problem. When confronted with a patient who has fever, leukocytosis, anemia, a vague disorder localizing in the right upper quadrant, with pain, tenderness and enlargement of the liver and elevation of the diaphragm, we have to think of a liver or a subdiaphragmatic abscess, and among other things we must consider the possibility of hepatic amebiasis.

In this patient, all of the findings were certainly

GEOGRAPHIC DISTRIBUTION OF PRIMARY LIVER CANCER



Figure 1

Figure 1. Map showing geographic areas of known or suspected high primary liver cancer incidence. Adapted, with permission, from Berman, C.: *PRIMARY CARCINOMA OF THE LIVER, A STUDY IN INCIDENCE, CLINICAL MANIFESTATIONS, PATHOLOGY AND AETIOLOGY*. London, H. K. Lewis & Co., 1951.

consistent with amebiasis, short of proving either a neoplastic or a bacterial cause. An amebic abscess is amenable to correction and complete recovery. If the abscess is an amebic one, the chances of survival are considerably greater if it is treated before surgery with one of the antiamebic drugs such as emetine or chloroquine diphosphate. In this instance we chose emetine because it acts more rapidly. Incidentally, if emetine causes significant clinical improvement, with a drop in the fever and a decrease in liver tenderness, amebic infection is very likely.

Dr. Staab pointed out that the use of emetine alone won't clear up the amebic abscess, for if it is large it must be evacuated. Up until a few years ago, there had been no reported cases of survival when an amebic abscess had ruptured into the peritoneal cavity, if the patient had not been pretreated with either one of the antibiotics or other drugs such as emetine which are effective against the trophozoite of *Endamoeba histolytica*. Some time ago, we observed a young woman who had ruptured a huge amebic abscess into her peritoneal cavity. She had been treated for three weeks with Aureomycin. She was then operated upon and survived the preceding massive rupture into the peritoneal cavity.

Dr. Hickey: We treated this patient for amebiasis after the initial aspiration for a couple of days, since we still weren't sure whether he had an amebic abscess or not.

I'd like to make a few further comments regarding carcinoma of the liver. I think that the history of this patient is almost classic for individuals with carcinoma of the liver: pain in the upper abdomen, palpable mass, some low-grade fever, etc. The diagnosis is usually made at autopsy. In general, the duration of life, from signs and symptoms to death, usually is in the range of four or five months or less. These people succumb very rapidly, and therefore any attempts at radical extrica-

tion appear to be in order. This disease tends to spread because of the proximity of the great vessels, and in this instance it did so spread. I think it must be easy to imagine the situation that would have confronted us if we had begun inferiorly and had ligated the great vessels, going into the right side of the liver and then had found the inferior vena cava completely replaced by cancer. It would have been practically catastrophic!

Dr. Hamilton: You say that this patient's history is typical for individuals with neoplasm. Is it any more typical for such people than it is for those who have abscess of the liver or an adjacent area, at least up to the time that you stick needles into them?

Dr. Hickey: It is typical of all of these conditions. It is also typical for carcinoma of the liver!

Coming Meetings

In State

- Nov. 4 **Rehabilitation of the Cardiac (Iowa Heart Association).** Hotel Roosevelt, Cedar Rapids
- Nov. 19-21 **Biennial Midwest Cardiac Conference** (Iowa Heart Association, SUI College of Medicine, State Department of Health and Iowa Clinical Medical Society). Iowa City
- Nov. 19-21 **Midwestern Cardiac Conference (Iowa Heart Association Division of Gerontology, Heart, and Chronic Diseases and Iowa Clinical Medical Society).** Medical Amphitheater, University Hospitals, Iowa City
- Dec. 8-9 **Surgery (Postgraduate Conference).** SUI College of Medicine, Iowa City

Out of State

- Nov. 1-5 **American Fracture Association.** Roosevelt Hotel, New Orleans
- Nov. 2-4 **American Clinical and Climatological Association.** The Homestead, Hot Springs, Virginia
- Nov. 2-4 **Association of American Medical Colleges.** Edgewater Beach Hotel, Chicago
- Nov. 2-4 **Gallbladder Surgery.** Cook County Graduate School of Medicine, Chicago
- Nov. 2-4 **Gynecology.** University of Kansas School of Medicine, Kansas City
- Nov. 2-5 **Interstate Postgraduate Medical Association, Forty-Fourth Scientific Assembly.** Palmer House, Chicago
- Nov. 2-5 **Omaha Mid-West Clinical Society.** Civic Auditorium, Omaha
- Nov. 2-6 **Gastrointestinal Radiography for Radiologists.** University of Minnesota, Minneapolis
- Nov. 2-6 **Internal Medicine (American College of Physicians).** State University of New York Upstate, Syracuse
- Nov. 2-6 **Review of Surgery of the Biliary Tract and Pancreas.** New York University, New York City
- Nov. 2-13 **General and Surgical Obstetrics.** Cook County Graduate School of Medicine, Chicago
- Nov. 2-13 **General Surgery (International College of Surgeons).** Cook County Graduate School of Medicine, Chicago
- Nov. 2-Dec. 7 **Photomicrography.** Stanford University, San Francisco
- Nov. 3-13 **Gastroscopy and Gastroenterology.** Cook County Graduate School of Medicine, Chicago
- Nov. 4-5 **Thirteenth Annual Postgraduate Assembly.** San Diego County Hospital, San Diego
- Nov. 4-7 **Twelfth Annual Meeting American Association of Blood Banks.** Edgewater Beach Hotel, Chicago
- Nov. 5-6 **Alumni Homecoming Course.** University of Southern California, Los Angeles
- Nov. 5-7 **Use of Laboratory Methods in Office Practice.** University of California, Los Angeles
- Nov. 5-7 **Southwestern Medical Association.** Roswell, N. M.
- Nov. 5-7 **Surgery of Hernia.** Cook County Graduate School of Medicine, Chicago
- Nov. 6 **Gastroenterology Research Group.** Drake Hotel, Chicago
- Nov. 6-7 **Central Society for Clinical Research.** Drake Hotel, Chicago

- Nov. 7 **Society for the Scientific Study of Sex.** Barbizon Plaza Hotel, New York City
- Nov. 7 **Chicago Heart Association Symposium on Cerebral Vascular Diseases.** Knickerbocker Hotel, Chicago
- Nov. 7-8 **Tenth Annual Conference of County Medical Societies' Civil Defense Organization.** Morrison Hotel, Chicago
- Nov. 8-11 **Association of Military Surgeons of the United States.** Mayflower Hotel, Washington, D. C.
- Nov. 9-12 **Illinois Academy of General Practice.** Morrison Hotel, Chicago
- Nov. 9-13 **Arthritis and Related Disorders (for General Practitioners).** Bellevue Medical Center, New York City
- Nov. 9-13 **Eleventh Postgraduate Assembly in Endocrinology and Metabolism.** University of California, San Francisco
- Nov. 9-13 **Review of Surgery of the Colon and Rectum (New York University Post-Graduate Medical School).** New York University, New York City
- Nov. 9-13 **Twelfth Annual Course, Diseases of the Chest (American College of Chest Physicians).** Park Sheraton Hotel, New York City
- Nov. 9-14 **Electrocardiography.** New York University, Bellevue Medical Center, New York City
- Nov. 9-20 **Radiochemical Analysis.** New York University, Bellevue Medical Center Post-Graduate Medical School, New York City
- Nov. 9-21 **Laryngology and Bronchoesophagology.** University of Illinois College of Medicine, Chicago
- Nov. 10-12 **Twelfth Annual Conference on Electrical Techniques in Medicine and Biology.** Sheraton Hotel, Philadelphia
- Nov. 11-12 **Thirteenth Annual Fall Postgraduate Clinic, Michigan Academy of General Practice.** Sheraton-Cadillac Hotel, Detroit
- Nov. 11-12 **Clinical Anticancer Drug Research (U. S. Public Health Service's Cancer Chemotherapy National Service Center).** Hotel Statler, Washington, D. C.
- Nov. 11-12 **Thirteenth Annual Fall Postgraduate Clinic, Michigan Academy of General Practice.** Sheraton-Cadillac Hotel, Detroit
- Nov. 12-13 **International Symposium on Cardiology in Aviation.** School of Aviation Medicine, Brooks Air Force Base, Texas
- Nov. 12-14 **Gerontological Society, Inc.** Statler Hotel, Detroit
- Nov. 12-14 **San Diego Academy of General Practice.** Hotel Riviera, Las Vegas
- Nov. 12-15 **American Medical Women's Association.** Arlington Hotel, Hot Springs, Arkansas
- Nov. 12-15 **Eighth Annual Meeting Pacific Coast Fertility Society.** Las Vegas
- Nov. 13-14 **Ear, Nose and Throat.** Stanford University, San Francisco
- Nov. 13-14 **Annual Clinical Conference, Tumors of the Head and Neck.** University of Texas Auditorium, Houston
- Nov. 14 **Adolescents.** Children's Hospital, University of California, San Francisco
- Nov. 14 **California Sanatorium Association Annual Meeting.** Santa Clara County Hospital, San Jose
- Nov. 15-20 **Radiological Society of North America, Inc.** Palmer House, Chicago

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| Nov. 15-21 | Annual Meeting, District 8, American College of Obstetricians and Gynecologists. Royal Hawaiian Hotel, Honolulu | Dec. 3-4 | First Annual Graduate Medical Education Conference-Residency Training Program. University of Pennsylvania, Philadelphia |
| Nov. 15-22 | District VIII, American College of Obstetricians and Gynecologists. Royal Hawaiian Hotel, Honolulu | Dec. 4-5 | Clinical Hematology. Stanford University, San Francisco |
| Nov. 16-18 | Fractures for General Physicians. University of Minnesota, Minneapolis | Dec. 5-6 | Second Part, Third Annual Meeting, Medical Society of the United States and Mexico. Las Vegas |
| Nov. 16-19 | Internal Medicine Symposia. University of Kansas School of Medicine, Kansas City | Dec. 5-10 | American Academy of Dermatology and Syphilology. Palmer House, Chicago |
| Nov. 16-19 | Southern Medical Association. Atlanta | Dec. 7-11 | Fifth Annual Course, Diseases of the Chest (American College of Chest Physicians). Ambassador Hotel, Los Angeles |
| Nov. 16-20 | Ophthalmic Plastic Surgery for Specialists. New York University, New York City | Dec. 7-18 | General Surgery. Cook County Graduate School of Medicine, Chicago |
| Nov. 16-20 | Review of Surgery of the Head and Neck, Including the Thyroid. New York University, New York City | Dec. 9-12 | Thirteenth Postgraduate Assembly in Anesthesiology (New York State Society of Anesthesiologists). Hotel New Yorker, New York City |
| Nov. 18-19 | Recent Advances in Diagnosis and Therapy of Malignant Disease. Academy of Medicine of Cleveland, Cleveland | Dec. 10-11 | Mycobacterial and Mycotic Diseases (TB Association of Greater New Orleans, Louisiana State University School of Medicine, Tulane University School of Medicine, Orleans Parish Medical Society). Louisiana State University Medical School, New Orleans |
| Nov. 18-21 | Annual Meeting, District V, American College of Obstetricians and Gynecologists. Statler Hilton Hotel, Detroit | Dec. 11-12 | Mental Retardation (Annual Meeting, Association for Research in Nervous and Mental Disease, Inc.). Hotel Roosevelt, New York City |
| Nov. 19 | Psychiatry and Neurology. University of Nebraska College of Medicine, Omaha | Dec. 11-12 | Glaucoma Symposia. University of Kansas School of Medicine, Kansas City |
| Nov. 19-21 | Inter-Society Cytology Council. Statler Hilton Hotel, Detroit | Dec. 11-12 | Symposium on Salt and Water Metabolism (New York Heart Association). Biltmore Hotel, New York City |
| Nov. 19-21 | Physical Medicine for Specialists. University of Minnesota, Minneapolis | Dec. 28-Jan. 16 | Second Bahamas Surgical Conference. British Colonial Hotel, Nassau, Bahamas |
| Nov. 19-21 | Western Surgical Association. The Broadmoor, Colorado Springs | Dec. 29-30 | International College of Angiology. Hotel Continental, Mexico City |
| Nov. 20-21 | Diarrhea. Stanford University, San Francisco | | |
| Nov. 22-24 | Second Western Regional Meeting, International College of Surgeons. Stardust Hotel, Las Vegas | | |
| Nov. 23-24 | Fractures Symposia. University of Kansas School of Medicine, Kansas City | | |
| Nov. 23-25 | D. C. Medical Society Scientific Assembly. Statler Hotel, Washington, D. C. | | |
| Nov. 23-25 | Review of Abdominal Surgical Diseases in Children. New York University, New York City | | |
| Nov. 24-28 | Puerto Rico Medical Association. Santurce, Puerto Rico | | |
| Nov. 27-Dec. 17 | Eighth Bahamas Medical Conference. British Colonial Hotel, Nassau, Bahamas | | |
| Nov. 29-30 | American College of Chest Physicians. Dallas | | |
| Nov. 29-Dec. 2 | Annual Convention, National Society for Crippled Children and Adults. Palmer House, Chicago | | |
| Nov. 30-Dec. 2 | Annual Meeting, American Academy for Cerebral Palsy. Statler Hotel, Los Angeles | | |
| Nov. 30-Dec. 4 | Clinical Cardiology (American College of Physicians). Tulane University School of Medicine, New Orleans | | |
| Nov. 30-Dec. 4 | Surgery of the Cornea. New York University, New York City | | |
| Nov. 30-Dec. 11 | Air Pollution. New York University, New York City | | |
| Nov. 30-Dec. 11 | Blood Vessel Surgery. Cook County Graduate School of Medicine, Chicago | | |
| Nov. 30-Dec. 11 | Diagnostic Radiology. Cook County Graduate School of Medicine, Chicago | | |
| Nov. 30-Dec. 11 | Surgical Technic. Cook County Graduate School of Medicine, Chicago | | |
| Nov. 30-Dec. 18 | Allergy. New York University Bellevue Medical Center, New York City | | |
| Dec. 1-4 | American Medical Association Clinical Meeting. Dallas | | |
| Dec. 2 | Second Annual Scientific Symposium "New Horizons in Medicine." Memorial Hospital of Long Beach, Long Beach | | |
| Dec. 2-4 | Medical Society of the United States and Mexico. Valley Ho Hotel, Scottsdale, Arizona | | |
| Dec. 2-5 | Annual Ophthalmology Conference. University of California, San Francisco | | |

PRE-CONFERENCE SEMINAR ON MEDICAL ASPECTS OF SPORTS

In Dallas on November 30, immediately prior to the annual Clinical Meeting of the AMA, there will be a national conference on the medical aspects of sports, sponsored by the AMA committee of that name.

Some of the outstanding speakers and their subjects will be as follows: Dr. Henry K. Beecher, "Amphetamine Sulphate and Athletic Performance, Subjective Responses"; Dr. Warren R. Guild, "Exercise and the Kidney"; Dr. Joseph H. Burnett, "Medical Program for High School Football"; Dr. David B. Dill, "Exercise and the Oxygen Debt"; Dr. Bruno Balke, "The Biodynamic Potential of the American Male Population"; Dr. Hans Kraus, "The Role of Physical Conditioning in Prevention of Athletic Injury"; and Dr. Richard Patton, "The Pathology of Trauma."

Besides the formal papers, there will be two panel discussions: "The On-Field Duties of the Team Physician" in which the participants will be Drs. Carl E. Badgley, Francis Murphey, William D. Paul and Thomas B. Quigley, and "The Prevention of Head Injury in the Athlete," with Drs. George G. Snively, Alexius Rachun and Henry J. Montoye. There is also to be a luncheon session, at which the topic for discussion will be "Youth Fitness."



IMPRESSIONS GARNERED AT THE REGIONAL CONFERENCE ON THE PROBLEMS OF THE AGED

On October 14 and 15, in Minneapolis, approximately 850 people attended a Regional Conference on the Problems of the Aged sponsored by the state medical societies of Iowa, Minnesota, North and South Dakota and Wisconsin. Most of them were representatives of state medical society committees on problems of the aged, Social Security agencies, churches and church-sponsored homes, private hospitals, state institutions, "Red Feather" agencies, proprietary nursing homes and civic groups, but there were also quite a number of retired individuals. The speakers included members of the medical profession, educators, clergymen, state and federal officials, labor leaders, newsmen and hospital administrators.

Many of the people in attendance were obviously pleased that the medical profession had taken the lead in sponsoring this conference. It seemed that many, many groups are interested in improving life for the elderly, and regarded this conference as a means of channeling the thinking of all such people in the same direction, and putting the psychological, emotional and socioeconomic facets of the problems into better focus.

One of the major emphases of the meeting was on the potentialities that elderly people possess for continued usefulness and self-satisfying work. Indeed, after the problem had been discussed, in all of its various aspects, the inference arose that perhaps the difficulty is not so serious as the "hue and cry" have led us to believe. First, aging is a natural process and to be expected. Second, by no means all people over 65 are indigent, unintelligent or unable to adjust. Third, acute illness requiring medical treatment is probably not nearly so prevalent in this age group as has been widely supposed.

Thus, though there certainly are old people for whom plans must be made and to whom care is not presently being given, there are a goodly number who aren't suffering financially, psychologically, socially or in any other way, but are happy and reasonably self-sufficient. Furthermore, the numbers of them can be increased.

THE AVOIDANCE OF LAWSUITS

A feature story in the October 15 issue of the *WALL STREET JOURNAL* describes several approaches to the problem of avoiding malpractice suits, some of which may not be familiar to our readers.

By way of introduction, the author, Mr. Jonathan Spivak, quotes medical sources as saying that such cases have increased 25-fold since the end of World War II, and that in California, where juries have rendered some of the largest awards, the basic annual rate for a insurance coverage with a limit of \$5,000 for a single case has climbed from \$45 in 1946 to \$200 currently for a surgeon, and the \$5,000 limit is considered far from adequate.

Doctors concerned about possible suits tend to consult more with their colleagues. Mr. Spivak quotes the *WISCONSIN MEDICAL JOURNAL* as saying, "The use of consultation may give you your best protection against a malpractice claim."

After experiencing their worst years in 1957 and 1958, California physicians got a bit of respite from malpractice litigation. The San Francisco Medical Society, he reports, had a ratio of 10.9 suits per 100 members in 1957-1958, in contrast with 4.4 per 100 immediately after the war, but in the past year the ratio has fallen to about 7 cases per 100 members, in part at least because the Society has conducted a campaign designed to warn its members against the common causes of difficulty.

A great deal is being done in some areas in securing cooperation between physicians and lawyers. In Tucson the local bar and medical societies have set up a 20-member "screening panel" with authority to review all malpractice claims brought against Pima County (Tucson) doctors by local attorneys. If the panel decides that there is insufficient evidence to justify putting the case into court, the local lawyers have agreed not to proceed with it. At the same time, the local doctors have agreed to produce witnesses if the case has seemed to the committee to be well founded. The joint panel functions somewhat like a grand jury by reviewing the evidence and determining whether or not a case shall go to trial, but of course its decisions lack the force of law. Yet in the newspaper article, Mr. Robert O. Leshner, the co-chairman of the screening committee, is quoted as saying, "The panel has worked remarkably well using moral persuasion."

Since processing its first case in July, 1957, the committee has considered a total of 11 claims. It ruled twice for the plaintiff, seven times for the doctor, and in two instances the case was dropped before the committee reached a decision. Mr. Leshner is further quoted as saying, "Without the panel we know that all of the cases would have been filed and probably one in eight would have resulted in a verdict favorable to the plaintiff."

Mr. Spivak describes another approach directed

at eliminating some of the causes of injury to patients. In 1954, when individual hospital liability insurance rates for California hospitals had climbed to the equivalent of \$100 per bed per year—as much as \$300 a bed for one Los Angeles institution—the state hospital association there instituted a cooperative insurance plan and, more importantly, instituted a scheme for pooling ideas on accident prevention. Reportedly, the plan has been highly successful. Insurance rates under the cooperative scheme were about \$50 per bed at the start, and subsequent favorable experience has justified a 15 per cent reduction. Hospital associations in Iowa, Nevada, Arizona, Montana, and Utah are now using it, and it is under consideration in Idaho, according to Mr. Spivak's account.

A full-time expert in hospital administration, hired by the underwriter of the hospital association's group liability insurance plan, constantly reviews accidents and claims reported by the hospitals. When these studies show certain hospital practices are resulting in a large number of injury claims, he proposes a corrective procedure. One of the first such recommendations called for the installation of bed rails on every hospital bed, since it had been found that 40 per cent of all suits against hospitals were the consequence of falls from beds. In consequence, over a period of five years, accidents of this sort are said to have been reduced 65 or 70 per cent. Currently, the California Hospital Association is said to be working on the "hot water bottle problem," urging its members to change over to thermostatically controlled water bottles that are sure not to burn the patients.

SPECIAL CONFERENCE ON LEGISLATION

Dr. John W. Billingsley, of Newton, president of the Iowa State Medical Society, has called a Special Conference on Legislation for 9:30 a.m., to 3:30 p.m., Sunday, November 8, at the Savery Hotel, Des Moines. County legislative contact men and deputy councilors, delegates to the State Medical Society, and members of the State Society's Executive Council, Committee on Legislation, and Public Relations Committee are especially urged to attend, together with the officers, councilors and legislative committee members of the Woman's Auxiliary. Other physicians and Auxiliary members will be welcomed.

At this meeting, a positive plan of action will be proposed by which it is thought that the medical profession, in cooperation with other people engaged in private enterprise, can win the war against the welfare state.

Among the speakers will be the Hon. Thomas B. Curtis, representative in Congress from Missouri and a member of the House Ways and Means Committee; Dr. Ernest B. Howard, assistant executive vice-president of the American Medical

Association, and Dr. Durward G. Hall, president of the Springfield, Missouri, Chamber of Commerce.

Those who plan to attend are asked to notify the ISMS headquarters, requesting luncheon reservations.

AMA PROPOSALS FOR AUTO SAFETY

A recent letter written by Dr. F. J. L. Blasingame, executive vice-president of the American Medical Association, to Hon. Kenneth A. Roberts, (D., Ala.) chairman of the Subcommittee on Health and Safety of the House Committee on Interstate and Foreign Commerce, recounts in some detail the proposals that the AMA has made for increasing safety on the highways. The ISMS Committee on Automotive Safety has recommended the publication of substantial portions of that letter, in the belief that they will be of intense interest to Iowa doctors.

"The American Medical Association has been concerned with the problem of automobile injuries and deaths for many years. Actions of our House of Delegates on this subject are numerous and date back as far as 1929. In 1948, our House passed the following resolution:

WHEREAS, the American Medical Association has in the past cooperated with the National Safety Council in its efforts to reduce the incidence of deaths and injuries from accidental causes; and

WHEREAS, the studies that have been made by the Bureau of Medical Economic Research of the American Medical Association have established the fact that fatal accidents cut off more years from the working lifetime of the American people than any one natural cause of death; and

WHEREAS, in the recent report made to the President by the administrator of the Federal Security Agency, it was stated that 40,000 deaths annually from accidents were preventable, therefore be it

RESOLVED, that the Board of Trustees be instructed to cooperate in every possible way with the National Safety Council and with every other agency, both public and private, concerned with accident prevention, to the end that research in accident prevention be further stimulated; that this excessive drain on hospital and medical facilities be lessened, and that the appalling loss of working years be reduced.

"For more than 30 years our Association has had committees actively working on the various aspects of the automobile accident problem. The present committee, known as the Committee on Medical Aspects of Automobile Injuries and Deaths, was appointed by our Board of Trustees in 1955. Its members are chosen from physicians who by their interest and work are considered to be well qualified in this field.

"We believe most people will agree that those who are called upon night and day to pronounce dead those persons killed on our highways, and who mend the broken bodies of those who are injured, can well be classified as interested and qualified in their efforts to prevent such carnage. Within the lifetime of most of us, we have seen substantial gains by the medical and allied health professions in the conquest of disease and disability. Many of the diseases that were commonplace early in this century have been conquered or brought under effective control. Many diseases that were once widespread are now a rarity. However, accidental injuries and disabilities due to automobile accidents have become the number-one public health problem of our time. We believe it is important, therefore, that the medical profession continue to increase its interest in the automobile accident problem until effective improvement is a reality.

"As the result of our studies, we are convinced that if speed, recklessness and drunken driving are controlled, and if improvements in automobile engineering are provided to protect those involved in collisions, then the present appalling toll of injuries can be substantially reduced. We are further convinced that enough facts are at hand to accomplish this purpose.

SOME PERSONS ARE MEDICALLY UNFIT TO DRIVE

"One of our most important objectives has been to provide the practicing physician with technical medical information which will enable him to advise and inform his patients relative to driving limitations that may be involved because of the effects of drugs or alcohol or the existence of physiological, pathological or emotional conditions.

"We realize that a certain percentage of accidents are undoubtedly caused directly or indirectly by medical conditions, drugs and other related physical factors. In an effort to identify these problems and to develop workable solutions, we sponsored a symposium on Medical Aspects of Automobile Injuries and Deaths at the Association's Annual Meeting in June, 1956, in Chicago, and in June, 1958, in San Francisco. Papers presented at these meetings were published in the *JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION* on January 26, 1957, and April 4, 1959. . . .

"Our next objective was to prepare a comprehensive book to serve as a guide to physicians in determining fitness to drive as related to the medical background of the individual. This book . . . represents a compilation of medical data and the opinions of nationally recognized authorities in the various special fields of medical practice. With this information available, it should be possible for the individual physician to make a significant contribution to the welfare of his personal patients and the public at large.

"Closely related to the need for factual information to aid the physician is the need to inform the driving public, through use of proper media, of the medical conditions which may affect their driving proficiency. We believe that many individuals would voluntarily discontinue or diminish radically their driving if they understood the dangerous possibilities involved in certain physical disorders and the potential effects of certain medications. In other words, we believe the technical information furnished the physician should be supplemented with a pamphlet written at the popular level and covering the more commonly encountered medical situations. In this way the patient can have the advantage of written information which will serve to instruct him as to whether he should or should not drive; and, if so, under what safeguards. Such a pamphlet, entitled 'Are You Fit to Drive?' has been prepared by our Committee on Medical Aspects of Automobile Injuries and Deaths, in cooperation with the Center for Safety Education of New York University.

DOCTORS SEEK A SHARE IN DRIVER LICENSING

"There is little doubt that a great deal of attention must be given to the very serious question of who shall be permitted to drive an automobile and who shall be denied that privilege. We emphasize that driving should be a privilege rather than a right. Therefore, our third objective is to develop better medical standards for driver licensing, including preparation of a guide for license examiners and assistance to state agencies concerned with licensing. This will be based on the information compiled on the medical criteria mentioned earlier and will constitute our recommendations for state licensing agencies. We recommend that each state medical society have a committee on traffic safety. . . . Such committees would be in a position to advise and assist state driver licensing bodies in the improvement of medical standards toward licensing.

AUTOMOTIVE ENGINEERS HAVE SACRIFICED SAFETY TO SPEED AND BEAUTY

"Another objective is to study and report on the design features of automobiles. Improvements of the design and safety equipment of automobiles promises the greatest possibility for rapid reduction in the automobile injury and death toll. If it is estimated that the average life of an automobile is 10 years, it is apparent that a very considerable reduction in the severity of injuries and a marked reduction in fatalities could be accomplished in that time if more attention were devoted to providing safety rather than increased horsepower, streamlining, color and chrome.

"The engineers and designers of the automobile—a relative handful of men in the industry—virtually control the destinies of the American

public on the highways. They are the men who decide which elements of safety design will be put into or left out of next year's new automobile.

"There is presently available an ample body of research data which clearly indicates the definite value of certain safety features of automobile design, construction and equipment. Yet, these safety features, if available at all, are all too often offered as optional equipment at extra cost. The automobile industry can make a great contribution toward solution of this problem by consulting with physicians, anthropologists, psychologists, related biological scientists and other scientific professions, and by giving realistic consideration to the wide range of physical characteristics of automobile drivers and riders, and to what happens to them in a collision.

A SCORE OF SPECIFIC SAFETY SUGGESTIONS

"In the past the automobile industry has made many important contributions to safety. However, in recent years, safety has generally been ignored in favor of other developments. The following suggestions have been repeatedly advanced by physicians, researchers and safety engineers, but with little success:

1. Anchorage for seat belts should be standard equipment. The public also needs education in the value of seat belts. The only evidence so far presented against seat belts is in the number of deaths in sports cars during roll-overs. This is not an argument against seat belts but against the design of such cars which do not provide roll-over bars. It should be quite simple to incorporate such a bar in the windshield and a second one back of the seat.

2. Crash padding of the dash, roof and other areas should be provided.

3. An improved steering wheel and recessed post; perhaps a collapsible assembly.

4. Safety door locks should be standard on all cars.

5. Removal of dangerous knobs, buttons, sharp edges and other gadgets.

6. Seats should be securely anchored to the floor of the car and should be locked into position. They should also be high enough in the center to protect the neck in a rear-end impact and prevent neck-snap injury (also called whip-lash).

7. Eliminate the deck behind the rear seat as a storage place for flying missiles, or provide it with an effective retaining wall or construct it as a recessed pocket.

8. Eliminate sharp, pointed hood ornaments. These fill no functional need and are potentially lethal to pedestrians.

9. Eliminate other hazardous exterior design features such as sharp, pointed bumper ornaments.

"In addition, we feel that the automobile industry should make an open-minded examination of

other suggestions, and adopt them where feasible. For example:

1. Shock-absorbing bumpers. If one drives his car into a brick wall at one mile per hour, he will be astounded at the shock transmitted by such an impact. One person testifying last year intimated that to absorb the energy at 20 mph in a 4,000 lb. car, such a bumper would have to be 16 ft. long.

2. Polarized headlight lenses and an oppositely polarized windshield spot. They would prevent glare at night and thereby prevent many pedestrian accidents and deaths.

3. Consideration should be given to the design of windshields and rear windows to meet standards based on optical principles.

4. Provide protective side-swipe bumpers along the sides.

5. Provide warning reflectors on the sides.

6. Remove tail lights from the realm of the artistic designer.

7. Provide a positive separation of turn signal lights from other lights.

8. Eliminate the glare-reflecting surfaces on the interior.

9. Provide accurate speedometers. Why do we have speedometer dials indicating up to 120 mph? Why not an audible warning device to denote when safe speed has been passed?

10. Construct drivers' seats with better regard for the posture and visibility of persons of various heights.

11. Make chrome, clocks, radiator ornaments and other expensive gadgets optional equipment, and install safety equipment as standard equipment.

"The following Resolution adopted by the House of Delegates of the American Medical Association at its meeting in Boston on December 1, 1955, is evidence of the interest in this subject by the entire medical profession and the conviction that something constructive can and should be done toward the prevention of injuries:

WHEREAS, traffic accidents in the United States claim 38,000 lives and 1,250,000 injured each year, with a probable 45 per cent increase in vehicle mileage in the next 10 years; and

WHEREAS, this death and accident toll could be materially reduced through improvement in automotive safety design and construction; and

WHEREAS, all other modes of public transportation except automobile are already safeguarded by Federal Safety standards; therefore be it

RESOLVED, that the American Medical Association, through its House of Delegates, strongly urges the President of the United States to request legislation from Congress authorizing the appointment of a national body to approve and regulate safety standards of automobile construction.

"On January 9, 1956, Dr. George F. Lull, who was at that time secretary and general manager

of the Association, addressed a letter to President Eisenhower in which he directed attention to the Resolution.

PROPOSALS FOR FIRST AID EQUIPMENT AND DRIVER TRAINING

"Another objective of the Association is to promote the extension of emergency first aid training to as many citizens as possible. This training will be of value not only in connection with the reduction of the severity of automobile crash injuries, but also in connection with civil defense needs as well. We feel it is also desirable, therefore, that all automobiles be equipped with first aid kits.

"Related to first aid is another objective—to assist in the promulgation and to promote the use of standards for organized emergency services in local communities, including training of rescue squads and standardized equipment for rescue vehicles. This is a future activity in which we will work through state and county medical societies. An example of one problem in this area is the need for better selection, education and control of drivers of emergency vehicles.

"As citizens and physicians, we recognize the importance of driving courses for all high school students. Similar courses should be provided for the public, and the curriculum should meet certain basic educational requirements. We sincerely hope the day will soon come when such certificates will be required of all prospective drivers as well as for repeat traffic-law violators.

"Since speed and driving under the influence of alcohol and related offenses are intimately associated, we feel that strict legislation in this field should be provided. The public needs to be aroused to the point whereby the legislators will provide these laws, and the traffic courts will administer them without fear and with complete impartiality.

"Because of the indefatigable work of many safety organizations over the years, the incidence of death has been greatly reduced in spite of the tremendous increase in the numbers of vehicles and numbers of miles traveled. In spite of this apparent success as to the incidence, however, the *total* numbers of deaths and injuries are increasing each year. Unless some of the suggestions

mentioned above are followed, it seems inevitable that these numbers will continue to increase, despite the splendid work now being done."

HOW MUCH DOES IT COST?

Medicine is not winning its battle against socialization. Apathy and opportunism are responsible for some of the lost ground, but doctors' reluctance to talk about the problem in terms laymen understand can cause greater losses.

Most people are not interested in the traditional principles of medical practice. They don't care about the free choice of a physician or third party interference as long as they stay alive, healthy and relatively solvent.

Health and money are things that Americans understand. Lately they have been assaulted with newspaper and magazine articles emphasizing the high and rising cost of medical care. They already know how much it costs to be sick but they often do not know how much federal taxes they are paying.

Why don't we see more publicity on state medicine in other countries? Some laymen have heard about Great Britain's socialized medicine but few people know how that program has failed particularly from a financial standpoint. The press has been remarkably silent on the fate of England's nationalized medical program after ten years' operation.

Now Congress is considering an "expansion" of social security which will guarantee prepaid medical care for people receiving social security payments. Wage earners probably don't realize that by 1965 this program alone will cost each worker \$285.00 per year if his annual income is \$6,000.

Past experience with our own federal agencies and the history of socialistic medical experiments abroad indicate that the proposed increase in taxation will cover only part of the cost. The balance will be added to our collective insolvency. Already Congress has authorized so many benevolent and costly (but vote-getting) enterprises that we could not pay our national debt in a hundred years even if we started now.

The cost of socialized medicine for the United States will be fantastic, far more than the cost of private medical care as it is today.

Money, what it will buy and the problems of earning it are concepts understood by every American. We should bring these relative figures to the attention of everyone in terms of dollars and cents.

Editorial, *THE BULLETIN*, The Oklahoma County Medical Society-The Oklahoma City Clinical Society, April, 1959, page 6.

Attend the
AMA CLINICAL MEETING
Dallas
December 1-4

Letter to the Editor

DANGERS AND DISADVANTAGES OF THE SERVICE PRINCIPLE IN THE BLUE PLANS

Sir:

The service principle is defined as coverage of medical or hospital care for a premium and within the terms of the contract. Don't try to separate the Blue Plans in your mind. These paired health coverages *belong* together.

In the hospitals' plan (Blue Cross), the types of care are usually specified and a limit of a certain number of days is set, with exclusions for certain types of illnesses or conditions. The more "comprehensive" the plan is, the more inclusive. Almost without exception, these contracts are written without regard for the subscribers' ability to pay—or, for that matter, for the cost of the care delivered. The "bed" occupied is usually classified as "semi-private." The stinger is simply that there is complete disregard for the variations in costs of bed occupancy! Pride is taken in the fact that although the cost of the item may be \$30 per day in Los Angeles and \$8 per day in Maryville, each is covered just the same! No matter how practice may change, and no matter how costs may vary, the coverage is always the same. No wonder the premiums rise nearly every month!

Cleverly, Blue Cross has nearly always insisted upon inpatient status as a prerequisite for coverage, although many plans still include *medical* services. Flagrant overusage of hospitalization should be expected as a consequence. It matters not whether the patient has any medical need for hospitalization. He must be hospitalized for the sake of his pocketbook, not for the sake of his illness.

Caught between the inequities of insurance writing and the (apparently uniformed) wishes of the patients, insurers continue to write health coverage contracts in this manner—always with a heavy advance in premium.

The patients take the "baby-sit" and "rest-cure" treatment, and then everyone squawks at the cost of the policies!

Then, there is a gimmick in hospitalization contracts—the outpatient coverage. If a physician does such and such a procedure in the outpatient department of a hospital, it will be covered. The idea is to discourage admission to the hospital as a bed-and-board patient. Here the idea changes just a bit. The hospital people want to keep control of these people. It matters not that they could be cared for better and more easily in a doctor's office. The patient must be kept the captive of the hospital. And you will see the hog's share of all

contracts written in this manner, with "our" Blue Plans leading the way.

We here in Iowa are all too familiar with the hospitals' attempt at usurpation of anesthesiology, physiatry, pathology and radiology. Without the help of the service principle of the Blue Plans and similar hospitalization contracts, such an attempted snatch of the practice of medicine would not have been possible.

Thank goodness some plans, through their Blue Shield "partner," are exploring the possibility that coverage for certain types of care could be provided at lower cost and the service could be rendered more satisfactorily in physicians' offices—where the patient belongs most of the time anyway!

Now, let us take a look at Blue Shield, or at least at Blue Shield plans in states where "the physicians' plan" has fought the physician free from Blue Cross, for there are many areas where the Iowa-freed fields are still the captives of the hospitals. How does the service principle affect the physician-patient relationship?

The matter of ethics needs a little thought here. First, because of the methods of insurance writing or because of the dictates about how the patient is to be treated so that he may receive coverage under his policy, it is indeed the very rare physician who has not compromised his personal honor so that his patient might be protected financially. (See *PRINCIPLES OF MEDICAL ETHICS*, Ch. I, Sec. 2, last line.) In other words, the terms of an insurance contract have led him to lie!

See also Chapter VII, Section 3, "Contract Practice," for what the participating physician has with Blue Shield is a contract:

Contract practice *per se* is not unethical. Contract practice is unethical if it permits of features or conditions that are declared unethical in these *PRINCIPLES OF MEDICAL ETHICS* or if the contract or any of its provisions causes deterioration of the quality of the medical services rendered.

One wonders how, in the Senior-65 under which the physician sacrifices his entire *net* fee and in the middle-income contracts under which he deducts one-third of his *net* fee, a deterioration in the quality of medical service can be avoided. Certainly physicians will be forced to leave many areas, and there will be few replacements available if these practices continue. Thus, medical care is sure to deteriorate in these areas.

Such plans limit free choice of physician.

They interfere with treatment by dictating what will and what will not be covered by insurance.

Statements published in these columns are not to be taken as reflections of the opinions or attitudes of the editors of the JOURNAL.

For example, they say that a particular lesion *will* be paid for if managed surgically, but *will not* be paid for if treated medically or by irradiation therapy. The above is a defect in nearly all insurance writing, and should not be regarded as an indictment of the Blue Plans alone.

But these faults that I have mentioned are all relatively minor items. The biggest criticism of all service writing is that the covered person has *only* the premium to pay. The hospitals deliver their services for *full pay*; i.e., a "non-profit" hospital provides its services at 105 per cent of cost or charges, whichever are less. The doctor delivers his services for a fraction of his usual fee.

Of course this allows the patient to *demand* care, and to ask, "Haven't I got it coming?" The service principle actually encourages overusage when no penalty for using benefits has been included as a means of guarding the plan.

When written at higher and higher income limits so that more and more people can be covered (at less and less of the physician's usual fee), these contracts provide a pattern for union "fringe benefits." In fact, such coverage is thought immediately to become the *right* of all union members! The Blue Plans have taught the commercial carriers how to write these contracts, but commercial carriers have no hold on the physician for a reduced fee.

Admittedly, the big unions and big employers are using medical and hospital benefits as poker chips. Neither gives a tinker's dam whether the federal government moves in tomorrow. It will make hardly any difference to either of them, but it will be highly disastrous for us doctors. The big danger in writing comprehensive hospitalization and full-service medical benefits for a major portion of the population is that when we make reductions from our usual fees, the government will have us perfectly hog-tied. It will need only to print "our" Blue Plans.

The most important consideration seems to have been completely overlooked in all service contracts—the *worth* of medical or hospital care to the patient. Unless he has a share in meeting the medical and hospital costs when rendered, how is he ever to be able to assess the worth of the care he has received? Let's dispel the idea that medical and hospital care is an *inherent right*, and return it to the status of needed care to be provided at realistic prices.

It matters relatively little whether the patient pays 10 cents or \$10 for a specific care problem, but it is *very* important that he pay something in addition to an insurance premium! By doing so he preserves not only his own dignity but that of his physician!

It is not apparent that deductible and co-insurance features will correct the inequities of service writing. These inequities are too variable. Certainly proper penalties would differ, depending on the patient's income level—personal situa-

tion—and must be very complex. These devices could reduce the abuses of present overusage, but would never right the basic wrong that is inherent in the service principle itself.

Contracts employing the service principle *always* penalize the physician! They always require him to content himself with bargain-basement fees, and they always include so many inequities as to make the whole set up exceedingly distasteful to him.

I haven't touched upon the question of whether the Blue Plans really have any ethical reason for being, from an insurance man's viewpoint.

We of the medical profession, and the hospital people though to a far less extent, squall loudly about the socialization of any and all things. These plans *are* the socialization of health insurance, even though the government isn't the agency that is offering them. Don't be deluded into thinking that socialization can be accomplished *only* by a governmental body! To some of us at least, socialization is socialization, just as hanging is hanging. It matters not who pulls the trap door!

Most physicians are honest, and though perhaps 99.8 per cent is too high a figure, surely as many as 90 per cent of them are so. These 90 per cent (estimated) can be relied upon not to overcharge their patients.

Not for a minute should we think of wiping out the service principle unless, or until, we have established a vigorous and *widely known* clearing house for grievances. The people must be protected against those of our group who have more than just a touch of larceny in their natures. We are dragging our feet on this important matter.

At the same time, we should be willing to publish a reasonable, somewhat flexible fee schedule. Since in the past we have tolerated the distasteful service principle with its low fee schedule, a reasonable, publicly known set of fees ought to be quite palatable.

The public would readily understand that maximum care must cost more than average care, and that the highly qualified physicians are entitled to a premium price for their superior abilities and training. It must be expected that people would object in some instances, but the right to challenge is inherently American, and if such disagreements were mediated by a committee of the physician's peers, why should he object? Certainly he could expect the committeemen to be just. We should not object to representatives of the laity on such a committee.

Our alternative is to sit back and continue to see the service principle eat the very heart out of our practices, and to provide the unions and the government with low pattern fee schedules.

Yes, it is high time for physicians to get out of the insurance business, and to influence the hospital people to do likewise.

HAROLD J. PEGGS, M.D.

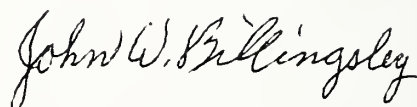
Creston, Iowa

President's Page

I hope that you are reading the series collectively entitled "In the Public Interest," the fourth number of which appears on green paper in this issue of the JOURNAL.

"In the Public Interest" reviews with you some of the policies and activities which the American Medical Association and/or the Iowa State Medical Society has undertaken, and copies of each successive installment are being mailed to members of the most recent General Assembly of Iowa and to newspaper editors throughout the state, so that those men may be able, as it were, to "read them over your shoulders."

A few legislators have told us that they are following this series with considerable interest, and the officers of your Society would like you to take special note of each article so as to be ready to amplify upon its statements whenever occasions arise in your conversations with these civic leaders.

A handwritten signature in cursive script, reading "John W. Billingsley".

President

THE JOURNAL *Book Shelf*



BOOKS RECEIVED

JEWISH MEDICAL ETHICS, by *Immanuel Jakobovits*. (New York City, The Philosophical Library, Inc., 1959. \$6.00).

PAIN AND ITCH, NERVOUS MECHANISMS (Ciba Foundation Study Group No. 1), ed. by *G. E. W. Wolstenholme*, O.B.E., M.A., M.B., M.R.C.P., and *Maevy O'Connor*, B.A. (Boston, Little, Brown and Co., 1959. \$2.50).

STERIC COURSE OF MICROBIOLOGICAL REACTIONS (Ciba Foundation Study Group No. 2), ed. by *G. E. W. Wolstenholme*, O.B.E., M.A., M.B., M.R.C.P., and *Cecilia M. O'Connor*, B.Sc. (Boston, Little, Brown and Co., 1959. \$2.50).

HANDBOOK OF POISONING: DIAGNOSIS AND TREATMENT, SECOND EDITION, by *Robert H. Dreisback*, M.D. (Los Altos, California, Lange Medical Publications, 1959. \$3.50).

CURRENT MEDICAL REFERENCES, ed. by *P. J. Sanazaro*, M.D. (Los Altos, California, Lange Medical Publications, 1959. \$3.50).

MASTER YOUR TENSIONS AND ENJOY LIVING AGAIN, by *George S. Stevenson*, M.D., and *Harry Milt*. (New York City, Prentice-Hall, Inc., 1959. \$4.95).

RELAXATION AND EXERCISE FOR NATURAL CHILD-BIRTH, SECOND EDITION, by *Helen Heardman*. (Edinburgh and London, E & S Livingstone, Ltd., 1959. \$.75).

SYNOPSIS OF GYNECOLOGY, FIFTH EDITION, by *Robert James Crossen*, M.D., *Daniel Winston Beacham*, M.D., and *Woodard Davis Beacham*, M.D. (St. Louis, The C. V. Mosby Company, 1959. \$6.50).

DIAGNOSIS AND TREATMENT OF MENSTRUAL DISORDERS AND STERILITY, FOURTH EDITION, by *S. Leon Israel*, M.D. (New York City, Paul B. Hoeber, Inc., 1959. \$15.00).

CLINICAL SCALAR ELECTROCARDIOGRAPHY, FOURTH EDITION, by *Bernard S. Lipman*, M.D., and *Edward Massie*, M.D. (Chicago, The Year Book Publishers, Inc., 1959. \$8.00).

1959-1960 YEAR BOOK OF MEDICINE, ed. by *Paul B. Bee-son*, M.D., *Carl Muschenheim*, M.D., *William B. Castle*, M.D., *Tinsley R. Harrison*, M.D., *Franz J. Ingelfinger*, M.D., and *Philip K. Bondy*, M.D. (Chicago, The Year Book Publishers, Inc., 1959. \$8.00).

A COOKBOOK FOR DIABETICS, by *Deaconess Maude Behrman*. (New York City, The American Diabetes Association, Inc., 1959. \$1.00).

BOOK REVIEWS

1958-1959 YEAR BOOK OF ENDOCRINOLOGY, ed. by *Gilbert S. Gordan*, M.D. (Chicago, The Year Book Publishers, Inc., 1959. \$7.50).

These summaries of original articles are informative, however brief. References to the original articles are available. The several endocrine systems are represented in the volume. Clinical experience is to at least some extent the basis of a majority of the articles, and

comparatively few of them relate purely laboratory investigation.

Editorial comment by Dr. Gordan supplements the material throughout, and contributes a great deal to this worthwhile volume.—*Loren G. Peterson*, M.D.

DISEASES OF METABOLISM, DETAILED METHODS OF DIAGNOSIS AND TREATMENT, FOURTH EDITION, by *Garfield G. Duncan*, M.D. (Philadelphia, W. B. Saunders Company, 1959. \$18.50).

In its fourth edition, this now familiar text has been changed little in its organization and presentation of material. The contributors are recognized authorities. New methods of investigation have changed many concepts of metabolism. The authors have attempted to relate these concepts to clinical medicine. The metabolism of proteins, carbohydrates and fats are discussed in separate chapters as completely as one will find them discussed in any other single volume. Chapters on mineral metabolism, vitamins and avitaminoses are done quite concisely. The chapter on undernutrition is a brief 26 pages, whereas the one on obesity, appropriately, contains 106. The latter chapter is worth reading, particularly for the comments it contains on the role of the physician in management.

Chapters on gout and porphyria are excellently written and interestingly illustrated. The editor has written the chapters on diabetes insipidus, spontaneous hypoglycemia and diabetes mellitus. There is an additional chapter by *Priscilla White* on juvenile diabetes.

The clinician who seeks an improved understanding of metabolic diseases will want this volume.—*Loren G. Peterson*, M.D.

ANESTHESIA FOR INFANTS AND CHILDREN, by *Robert M. Smith*, M.D. (St. Louis, The C. V. Mosby Company, 1959. \$12.00).

The wealth of experience that the author has had as an anesthesiologist at the Children's Medical Center in Boston qualifies him exceedingly well to present this excellent book to the medical profession. The great number of cases included in some of the statistics indicates the background for his book. A total of 10,953 operations were performed during the years 1954, 1955 and 1956 on children under 10 years of age.

The contents of this book present all aspects of the subject from the basic requirements in pediatric anesthesia through the preparation of the child for anesthesia and on to the precise methods to be used in

various situations. Fluid therapy, resuscitation, legal considerations and other related matters are included. One chapter (written by Charles D. Cook, M.D.) on respiratory physiology in infants and children is especially worthy of mention.

The author's style makes the book very pleasant to read, his approach is refreshing, and the contents of his book are valuable. Adequate references are provided, and various charts and photographs add greatly to the presentation.—*M. E. Alberts, M.D.*

THE SURGEON AND THE CHILD, by *Willis J. Potts, M.D.* (Philadelphia, W. B. Saunders Company, 1959. \$7.50).

Dr. Potts briefly discusses some of the more common problems in pediatric surgery, and interjects some of his own medical philosophy.

The book is written in such a way as to make it extremely enjoyable reading, and I would recommend it as not only a good review of the field of pediatric surgery but also as a thought-provoking volume.—*Charles C. Edwards, M.D.*

THE FAMILY MEDICAL ENCYCLOPEDIA, THE NEW STANDARD AND COMPLETE REFERENCE BOOK OF MEDICAL CARE FOR THE ENTIRE FAMILY, by *Justus J. Schifferes, Ph.D.* (Boston, Little, Brown and Company, 1959. \$4.95).

This new, moderate-sized encyclopedia has been edited by Dr. Schifferes and checked by eminent medical authorities of the day. It contains some diagrams, and an alphabetical listing of medical terms. Most of these are defined rather briefly, but some subjects such as "Blue Cross," "cancer" and "pneumonia" are discussed at length and in lay terminology.

The average doctor hates the idea of his patients' having a "health book" in their homes, for most of these volumes cause the patient to think he has sufficient knowledge to treat himself. Most of them, also, make the patient hyperanxious about his health. However, this book has been written with a different goal, namely to explain certain large words that the doctor may have inadvertently used in his conversations with the patient. It has also been written to give the patient certain fundamental information about disease so that he can use his doctor more intelligently. And finally, the tenor of the whole book has the effect of quelling, rather than arousing, fear.

This volume has been excellently conceived, and should serve a worthwhile purpose in the home, or in high school or public libraries.—*Daniel A. Glomset, M.D.*

TEXTBOOK OF SURGERY, THIRD EDITION, ed. by *H. Fred Moseley, M.D.* (St. Louis, The C. V. Mosby Company, 1959. \$17.00).

This edition very capably continues the original aim of the editor to present a textbook for "students at the time of their graduation and during their period as interns."

Actually, the scope of surgery has so broadened since most of us were in medical school that this book is a valuable review and reference for practicing physicians

as well. The subspecialties are well handled, and interesting chapters cover irradiation injuries and the use of radioisotopes.

Not only is there an excellent bibliography, but film references are supplied with each chapter. The illustrations are well chosen, and include color reproductions of Dr. Netter's Ciba Series.

I am very favorably impressed by this book throughout, and consider it a fine introduction to current surgical practice.—*Alfred N. Smith, M.D.*

FUNDAMENTALS OF OTOLARYNGOLOGY, A TEXTBOOK OF EAR, NOSE AND THROAT DISEASES, THIRD EDITION, by *Lawrence R. Boies, M.D.* (Philadelphia, W. B. Saunders Company, 1959. \$8.00).

The third edition of Dr. Boies' textbook represents a further improvement in a volume that was already a widely accepted reference work in otolaryngology. Though it is intended primarily for the general practitioner and the student, it contains a wealth of material so well written and organized that it is an essential part of the library of the otolaryngologist.

Many of the illustrations have been brought to a very fine degree of perfection.

The contributions of Dr. Boies' associates have added much to the succinct, clear-cut, authoritative information in the book. Chapters 8 and 9 on tinnitus and vertigo, by Jerome A. Hilger; chapters 11, 12 and 13 on the nose and the common cold, by Anderson C. Hilding; chapter 10 on audiology and aids to hearing, by Conrad J. Holmberg; chapter 14 on nasal allergy, by Robert E. Priest; chapter 15 on chronic nasal obstruction, by George M. Tangen; chapter 21 on nasal surgery, by Douglas R. Kusske; chapter 22 on reconstructive nasal surgery, by Harold S. Ulvestad; and chapter 33 on tumors of the nose and throat, by Dr. Hilger are especially noteworthy. Dr. Boies has provided a very well written and illustrated section on current developments in the surgical treatment of deafness.

In a survey conducted in Minnesota, Dr. Boies found that 25 per cent of the activities of general practitioners were concerned with problems in otolaryngology. This third edition of his text certainly provides an excellent way for the generalist to bring himself abreast of the new developments in otolaryngology, and thus to serve his patients better as a family doctor.—*Byron M. Merkel, M.D.*

HEARING, A HANDBOOK FOR LAYMEN, by *Norton Canfield, M.D.* (Garden City, New York, Doubleday & Co., 1959. \$3.50).

This book is the first volume in a new Layman's Handbook Series on diseases and abnormal health conditions.

It is very well written, and since as the title suggests, it is intended for the layman, technical terms are rarely employed. Those which are used are well defined and explained. The book will serve as an authoritative source of information concerning many problems—physical, psychological and socio-economic—and will provide some very practical help in solving them.

The detection of hearing losses in all age groups from infancy to "senior citizenship" is carefully con-

sidered in non-technical, easily-understandable language, and a very complex index is provided for easy reference.

Chapter IX, "Better Hearing With Hearing Aids," and Chapter X, "Beyond the Hearing Aid," should be required reading for anyone who has any contact with hard-of-hearing people of any age.

The book is most highly recommended for doctors and laymen alike. It does a truly remarkable job of supplying understanding and guidance in a field that has been badly neglected in the past.—*Byron M. Merkel, M.D.*

THE PLASMA PROTEINS: CLINICAL SIGNIFICANCE, by Paul G. Weil, M.D. (Philadelphia, J. B. Lippincott Company, 1959. \$3.50).

Dr. Weil has incorporated in a small monograph (122 pages) that might fit into one's pocket the practical knowledge of the plasma proteins. The material was published in the September, 1958, issue of AMERICAN PRACTITIONER AND DIGEST OF TREATMENT. Contents of the book include chapters on albumin, plasma protein "substitutes," globulins, liver disease, plasma protein complexes and other subjects. The type is large, and the material is rather easy to read.

Some say, "Good things come in little packages"; others say, "Beware the quiet man." Both statements are applicable to this book. It is a preview of things to come. Never before has there appeared a practical compendium on the subject of plasma proteins. There have been reams written on appendicitis and on Colles' fracture, but relatively little on plasma proteins. Our hospital laboratories are ill-equipped to further our knowledge, and often there is a lack of desire to do so. Yet, the plasma proteins are our "life blood," and to ignore them means that we are seeing "only a part of the elephant." Future progress in medicine will take place less in surgery, or in gross or microscopic pathology, but will consist of discoveries about the chemical processes of the body. These are crying out for exploration.

This book is intended to guide us into the paths of the future.—*Daniel A. Glomset, M.D.*

SURGICAL SERVICE GUIDE, by Louis T. Palumbo, M.D. (Chicago, The Year Book Publishers, Inc., 1959. \$6.00).

This book is a synopsis. It was originally intended for the author's surgical service, and its contents represent original thoughts on some topics, and other matter has been adapted from predecessors or contemporaries. It has supplemented the residents' ward teaching in the fashion of a visual aid.

Although it is written primarily at the surgical-novice level, it has chapters that will interest specialists and generalists alike. A section on follow-up evaluation of certain surgical patients is of interest, although it is not entirely applicable to the average surgeon's practice. The recent rapid advancements in cardiovascular surgery justify that topic's being given additional space in future editions.

Attractive arrangement and readability have helped make this guide popular, and the enthusiastic reception offered to it outside the author's hospital has prompted the publication of this material.—*Alfred N. Smith, M.D.*

FEEDING PROBLEMS IN PRESCHOOL CHILDREN

Dr. W. D. Snively, of Evansville, Indiana, has outlined an interesting program for combatting the nutritional difficulties of the small child who refuses to eat, or more particularly, who refuses some or many parts of a well-balanced diet, or refuses to consume it at mealtimes.* He says, "Although such children may appear superficially normal, on examination they are found to be retarded in their growth, irritable, victims of repeated digestive upsets and infections. Typically, their parents report that they are always tired." Their striking pallor has led Dr. Preston McLendon, professor of pediatrics, George Washington University, to describe them as "children in the pastel tints."

The solid protein foods—meat, eggs, cheese, fish—are the keys to good nutrition for little children, he maintains, and every meal set before such a youngster should feature at least one of them.

Some boys and girls are inclined to consume milk to the exclusion of other foods. If so, Dr. Snively believes that milk should be altogether denied them. "Frequently," he says, "this omission is the key to success, for it makes the drastic change in eating habits easier for both parents and child."

"The time to eat is mealtime and the place is the table," he continues. "When the child comes to the table, he should be given the privilege of making a decision—whether to remain at the table and eat, or leave the table with the understanding that if he does, he is to have no food until the next meal."

Between-meal snacks, in any event, should be limited to fruits, vegetables and water. Even with these non-satiating foods, moderation should be practiced.

Dr. Snively says his regimen is one that he used successfully in the management of several thousand "pastel tinted" children.

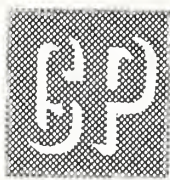
* Snively, W. D., Jr.: Feeding problems in preschool child. J. INDIANA M.A., 52:1320ff., (Aug.) 1959.

ANNUAL MEETING OF MILITARY SURGEONS

Reserve Retirement point credits may be earned by Medical Service Reserve officers who attend the daily sessions of the 66th Annual Convention of the Association of Military Surgeons to be held at the Mayflower Hotel, Washington, D. C., November 9-11.

The awarding of credits will be based on one point for each day of attendance if the session attended is two hours or more in length. Not more than one point can be earned per day.

The convention theme will be "The Practice of Military Medicine—Broadening Concepts."



Iowa Academy of General Practice

KEEP YOUR MEDICAL STAFF UP-TO-DATE

V. L. SCHLASER, M.D.

In the State of Iowa there are 168 licensed hospitals varying in capacity from 8 to 957 beds and also differing widely in the facilities that they possess. The efficiency of any hospital in the care of patients depends upon a combination of many factors, and since the medical staff is one of the most important of these, only the proper organization of that group will allow the hospital to operate properly.

A recent survey has shown that only a few medical staffs have revised their by-laws, rules and regulations, and brought them up to date during the past five years. Many of them have not done so within the past 20 years. Such revisions should be undertaken every three or five years if the rules are not to become antiquated and if they are not to become disregarded.

Each medical staff, depending upon its size and upon the size of the hospital concerned, will have individual characteristics. However, there are a number of major principles that are fundamental and should be embodied in the by-laws, rules and regulations of each of them. Some hospitals are accredited by the Joint Commission on Accreditation of Hospitals, and the medical staffs of such institutions must keep their by-laws, rules and regulations revised and up-to-date. But this action is just as important for the non-accredited smaller hospitals.

Here are some of the functions of a medical staff that the by-laws, rules and regulations should be designed to facilitate.

Membership. It is important for the by-laws to set the qualifications for medical-staff membership and to set forth the procedure for appointment to it. Also, in staffs with sufficient numbers of members, the membership categories should be defined.

Responsibilities. The medical staff is responsible for the quality of medical care rendered to patients. The maintenance of high standards of medical care will depend upon the character of the staff and upon the effectiveness of its organization in carrying out the following:

1. Making staff appointments and granting hospital privileges
2. Constantly reviewing and analyzing the clinical work done in the hospital
3. Supporting medical-staff and hospital policies
4. Maintaining adequate medical records
5. Procuring autopsies
6. Holding necessary consultations.

Organization. Each staff should have duly elected officers from the active staff membership. The committees essential for efficient and proper operation should be set up. A small staff may function as a committee of the whole. The two most important committees are Medical Records and Tissue. The hospital's medical records must contain sufficient information on each patient so that the diagnosis and the indicated treatment can be readily determined. The Tissue Committee shall investigate and report the agreement among the preoperative, postoperative and pathologic diagnoses, and shall decide whether the surgical procedures undertaken were justified or not. The function of this Committee actually determines the level of surgery performed.

For the improvement of care and treatment of patients, analyses of the clinical work in the hospital should be reviewed at periodic staff meetings.

Departmentalization. In hospital staffs of sufficient size, services or departments should be set up. Whenever there is departmentalization, a Department of General Practice is essential.

Rules and Regulations. It is necessary that sufficient rules and regulations be established according to the size of the hospital and staff. It is just as important that those rules and regulations be enforced.

Amendments. Methods must be established whereby the by-laws may be amended when necessary.

It is just as important to one physician as to another that the medical staff's by-laws, rules and regulations be kept up-to-date. The State of Iowa is one of the leaders in the Union. As physicians, let us do our duty by keeping all medical staff by-laws, rules and regulations up-to-date.

In the Public Interest



Men of Medicine Oppose Medicine Men

With the support of governmental agencies such as the Federal Trade Commission and the Food and Drug Administration, the American Medical Association constantly endeavors to protect the public against charlatans whose pretensions have attained them a national or a regional following. At considerable risk—since any sort of attention accorded such people may have the effect of promoting rather than deterring their grafts—the AMA exposes their gimmicks and publishes warnings against them in whatever media are most likely to reach the people who are being victimized. State departments of health, state medical societies and individual physicians assist in this work, both by notifying the AMA when new grafts have appeared locally, and by warning the public or prosecuting the offenders at the grass-roots level.

“MIRACULOUS REMEDIES” ARE EASY TO SELL

Efforts to put certain firms or individuals out of business or to limit the scope of their activities require strong justification, for Americans have always been partial to the idea of “Let the buyer beware!” But as regards products and services claimed to restore or preserve health, the buyer is relatively defenseless and highly susceptible to injury. Though people are doubtless far better informed on such subjects than they were a generation or more ago, they don’t yet know and they aren’t likely to learn enough about anatomy, physiology and biochemistry to make them good judges of the materials and procedures that they are told will cure their ills. Thus, they are easily duped.

People have always been partial to *simple* explanations and *simple* correctives, not realizing that truth and efficacy are almost never simple.

The pre-classical Greek philosophers, one recalls, assumed when they began speculating on the probable ingredients of the universe that the most likely formula would be the simplest. The best-remembered of the theories that they dreamed up asserted that our environment consists of just four things—earth, air, fire and water. Contrastingly, by painstaking research, scientists have since discovered about 100 separate elements, and the list may not yet be complete. It is people’s too ready acceptance of simple answers that provides clienteles for “healers” who peddle panaceas.

Paradoxically, however, people nowadays at least frequently welcome complicated “remedies,” too. This willingness may, of course, be no more than a recrudescence of the belief in magic, but the fact remains that few people scoff, any more, at contraptions for which someone of Rube Goldberg’s turn of mind might have drawn the plans. No more than 50 or 60 years ago, our fathers or grandfathers called “Get yourself a horse!” at the drivers of primitive automobiles, yet today many people are prepared to risk their very lives on anything that is merely labelled “electronic” or “atomic.”

People want speedy and sure-fire answers to their health problems, and if they can’t get them from orthodox sources, they are quick to look elsewhere. Doctors of medicine have virtually eradicated plagues such as diphtheria and small-pox, they have found ways by which diabetics can live out ordinary spans of life in relative comfort, and they have been successful in their surgical procedures for the correction of malformations of the heart and for the removal of tumors from the brain. But they aren’t yet 100 per cent successful in curing some acute illnesses, and can do no more

than palliate some of the chronic ones. The individuals whose difficulties haven't been remedied both completely and promptly actually seek out fakirs.

IT IS EASY TO RECOGNIZE A MODERN MEDICINE MAN

Though it is incredible to those of us who couldn't live with ourselves if we thought we were deliberately harming or even hoodwinking our fellow human beings, there are plenty of people who apparently have no such compunctions. They must utterly despise the innocents upon whom they prey. In South Dakota last year, a number of men in various localities claimed to be able to diagnose and then to treat all sorts of human ailments by examining and later prodding the sole of one or the other of a patient's feet. Some of these people, who call themselves "reflexologists," settled afterward in other states, including Iowa, when they had been driven from South Dakota. Elsewhere men with big black boxes have twirled knobs on instrument panels rivaling those of commercial airliners and have affected to diagnose either by "analyzing" drops of blood or by "tuning in" vibrations that they claimed were indications of health or diseases of myriad sorts.

One of the maddening aspects of the problem of exposing charlatans is the fact that each of them appears to have achieved some successes. The explanation, of course, is that illness almost always has a psychosomatic component. On occasion, it is the only one, and we used to call such ailments "imaginary," but we have quit doing so, for an individual is truly ill even if he just thinks he is. In such instances, and when the patient's renewed confidence in his ability to get well is coupled with the recuperative powers of his body, he recovers quickly. Many patients benefit immeasurably simply from having been given opportunities to talk out their troubles. And then one must not forget that in every double-blind experiment in which half of a great number of patients are given placebos—tablets that only superficially resemble the medication which is being tested—many individuals in the control group appear to have been benefited just as much as were any of those who actually received the medicine.

Here are some stigmata by which a medical charlatan can be recognized:

1. He employs a "secret" formula or machine, and offers a single answer—a panacea—for all problems.
2. He guarantees a quick cure.
3. He advertises his wares or services, usually employing testimonials.
4. He clamors for medical investigation and recognition.
5. He says that M.D.'s are afraid of his competition.

6. He says that surgery, x-ray or drugs do more harm than good.

PRETENDERS DO MOST HARM BY KEEPING PATIENTS FROM SEEING DOCTORS

There have been instances in which an ignorant bungler attempting a cure by means of violent manipulations has broken some of a patient's bones, and there have been others when charlatans have operated upon patients' bank accounts to the extent of leaving them too little money to pay rent or to buy food for their children. Incidentally, there is a nasty trick which they sometimes employ—that of collecting in advance for a series of treatments, issuing a book of tickets in exchange. By and large, the chief harm that medical pretenders do, however, is to keep patients from seeing doctors of medicine until their illnesses have progressed beyond the stage at which they can be cured.

Especially in cases of cancer but also in other sorts of illness, delay in diagnosis can be extremely serious, and even fatal. The tonic that the patient receives from the pretender, or the "treatments" that he gets from him may not be harmful in themselves. They may even ease his pain. But they don't correct the basic difficulty, and every day that the patient wastes before going to consult a doctor lessens his chances of recovery.

CONCLUSION

Modern medicine is based on science, and learning it requires a high degree of intelligence and the expenditure of five or more years of intense, unrelenting effort on the part of the student, beyond his graduation from college. Furthermore, it requires superbly capable teachers, vast medical libraries, elaborate laboratory equipment and really large hospitals where a full range of physical and mental ailments is represented. To date, the schools producing doctors of medicine are the only institutions that provide men and women capable of giving first-class health care.

Modern medicine, as doctors of medicine practice it, is based upon science. It contains nothing that hasn't been painstakingly proved, and then proved again and again.

Finally, the doctor of medicine is a humanitarian. He makes a very good living for himself and his family, but in doing so he accepts responsibility, day in and day out, literally for the life or death of his patients—a responsibility that few of his fellow citizens would accept at any price. There almost is no such thing as a doctor who begrudges a practice in his community to any qualified physician who chooses to settle there. The simple fact is that a doctor of medicine prizes the health and happiness of his fellow man even above his own. It is that reason, and that reason alone, for which he seeks to guard Americans against medical charlatans.

STATE DEPARTMENT OF HEALTH


COMMISSIONER

EFFICACY OF THE SALK VACCINE

The accompanying tabulations in which 1959 poliomyelitis patients, paralytic and non-paralytic, are distributed according to age group and vaccination status, are preliminary ones. Much additional investigation will be required before an accurate and final drafting can be made. But they show, nevertheless, that little paralytic poliomyelitis occurs in persons who have had three or more immunizations.

Here are some of the additional things that must be done:

We must evaluate the length of time between the onset of paralytic poliomyelitis and the completion of the original series of three injections. There are some persons in the Iowa tables who had received the third injection in 1957. According to our present schedule of required booster injections, these persons should not have been considered satisfactorily immunized.

We need a similar check on paralytic poliomyelitis patients who had had four immunizations. There are some among the eight such persons in this group who had the original series of injections two or more years ago, and the fourth injection during the week of onset of poliomyelitis. Essentially, these individuals had lost the immunity acquired from the original series, and as yet had received no protection from the booster injection.

Work must be completed to bring all cases listed as "Unknown," both as to age and as to im-

munizations, into definite age and immunization categories.

For comparison, a federal tabulation from the U. S. Public Health Service Reports has been reproduced here, along with the Iowa figures.

IOWA POLIOMYELITIS CASES BY PARALYTIC STATUS, VACCINATION AND AGE GROUPS

January 1, 1959, Through September 26, 1959

PARALYTIC							
Age Group	Number of Injections of Vaccine						TOTAL
	0	1	2	3	4	UNKNOWN	
0-4	33	10	10	6	2	9	70
5-9	23	2	3	5	4	6	43
10-14	6		1	1		1	9
15-19	9		1	3	1	3	17
20-29	9	2	2	3		5	21
30-39	3	1			1	2	7
40+	2					1	3
Unknown	1		1				2
TOTAL	86	15	18	18	8	27	172
NON-PARALYTIC							
0-4	9	4	7	7	6	8	41
5-9	10	4	6	6	10	5	41
10-14	5		3	5	3	8	24
15-19	9	1	1	6	4	4	25

UNITED STATES POLIOMYELITIS CASES BY PARALYTIC STATUS, VACCINATION AND AGE GROUPS

January 1, 1959, Through September 21, 1959

AGE GROUP	PARALYTIC Number of Injections Vaccine							NON-PARALYTIC Number of Injections Vaccine							UNSPECIFIED	
	0	1	2	3	4	UNK.	TOTAL	0	1	2	3	4	UNK.	TOTAL	TOTAL	TOTAL
0-4	782	145	86	118	17	86	1234	137	26	37	46	12	23	281	74	1589
5-9	290	62	61	119	21	42	595	99	17	28	86	54	21	305	51	951
10-14	86	11	31	48	11	8	195	57	12	15	66	20	24	194	28	417
15-19	101	11	14	29	1	9	165	41	6	11	42	10	9	119	15	299
20-29	239	18	17	34	10	23	341	58	10	14	34	10	12	138	31	510
30-39	130	12	2	15	5	19	183	27	7	7	10	—	8	59	14	256
40+	58	2	—	2	—	6	68	9	1	2	3	—	1	16	11	95
Unknown	11	—	1	1	—	1	14	5	2	2	1	2	3	15	11	40
TOTAL	1697	261	212	366	65	194	2795	433	81	116	288	108	101	1127	235	4157

Age Group	Number of Injections of Vaccine						TOTAL
	0	1	2	3	4	UNKNOWN	
20-29	8	5	3	3	7	5	31
30-39	5	1		1	2	5	14
40+	4	1	1			3	9
Unknown				1	1		2
TOTAL	50	16	21	29	33	38	187
UNSPECIFIED							
0-4							
5-9	2			1		4	7
10-14				2	1	1	4
15-19	1			1		1	3
20-29	3	1				4	8
30-39	1					1	2
40+	1			1		1	3
Unknown			2			1	3
TOTAL	8	1	2	5	1	13	30

IOWA POLIOMYELITIS CASES BY COUNTIES
Week Ending October 3, 1959

County	New Cases	Total Cases
Allamakee		1
Adams		2
Audubon		2
Benton	1	2
Black Hawk	2	18
Boone		10
Bremer		1
Buena Vista		4
Butler		4
Cerro Gordo		7
Clarke		1
Clay		2
Clinton		2
Dallas	1	21
Davis		1
Decatur		1
Des Moines		8
Dickinson		1
Dubuque		6
Floyd		2
Grundy		1
Guthrie		6
Hancock		1
Hardin		7
Harrison		8
Herry		1
Howard		1
Humboldt		3
Jackson		2
Jasper		12
Johnson		3
Jones		2
Kossuth		1
Lee		7
Linn		6
Lucas		2
Madison		6
Mahaska		2

County	New Cases	Total Cases	
Marion		3	
Marshall		3	
Monona		3	
Montgomery		2	
Muscatine		1	
Page	1	1	
Plymouth		1	
Pocahontas		1	
Polk	1	158	
Pottawattamie		2	
Poweshiek		3	
Sac	1	2	
Scott	2	16	
Sioux		1	
Story		3	
Union		2	
Wapello		1	
Warren		2	
Washington		1	
Webster		14	
Winneshiek		2	
Woodbury		6	
Worth		1	
Wright		2	
		398	
Non-Paralytic	188	Total cases this week	9
Paralytic	179	Total cases last week	31
Unspecified	31	Total cases same week last year ..	6
		Total cases same date last year	59

THE ROLE OF THE STATE DEPARTMENT OF
HEALTH IN IOWA'S "GRADE-A"
MILK PROGRAM

No matter how comprehensive the state and local milk sanitation regulations may be, they afford protection to the consuming public only to the extent to which their provisions are enforced in the production, processing and distribution of milk and milk products.

In view of the fact just stated, and because of the many differences between state and local milk laws, the 56th General Assembly of Iowa, in 1955, made the Department of Health responsible for making sanitation surveys and certifying annually the degree of compliance to state milk laws of all "Grade-A" milk supplies in Iowa. With this responsibility came the tasks of making uniform the interpretation and enforcement of "Grade-A" milk laws and eliminating trade barriers from local laws throughout the state. It was also intended that these surveys should eliminate duplications of inspection by the various enforcing agencies.

Although state milk laws do not make the grading or grade-labeling of milk compulsory, they do set up definite requirements to control the use of the "Grade-A" label and to prevent its misuse by a dairy producer or a dairy processor who would label his dairy products "Grade-A" without regard for the bacterial count or the sanitary conditions

in the production, processing and distribution of his milk. These state and local laws for "Grade-A" must conform to and not be in conflict with the 1953 edition of the Milk Ordinance and Code recommended by the U. S. Public Health Service.

To measure objectively the extent to which milk sanitation enforcing agencies are upholding state and local milk regulations and requirements, the State Department of Health uses a survey rating method that has been developed by the U. S. Public Health Service. The U. S. Public Health Service Milk Ordinance and Code is used as such a yardstick, in order that ratings of various milk supplies may be comparable with one another, both intrastate and interstate. The rating method is designed so that if a pasteurization plant and its producing farms comply with all of the "Grade-A" requirements, the sanitation compliance rating will be 100 per cent, but if the plant or some of the producing farms fail to satisfy one or more of the "Grade-A" requirements, the sanitation compliance rating is reduced in proportion to the amount of milk and milk products involved in the violation, and to the relative sanitation and public health importance of the violated requirement.

Survey ratings are determined from data obtained from the records of the enforcing agency and from an evaluation of sanitary practices at producer farms, pasturization plants and receiving stations. The acceptance of laboratory data is contingent upon the utilization of standard procedures by the laboratories concerned. Accordingly, it is necessary to determine from the state laboratory-supervising agency or by appropriate investigation that both sampling and laboratory procedures are in substantial conformity with the latest edition of Standard Methods for the Examination of Dairy Products recommended by the American Public Health Association.

Survey ratings are compliance ratings, rather than safety ratings. However, a compliance rating of 90 per cent does mean that the "Grade-A" milk supply in general is as safe as a reasonably strict enforcement of state and local milk sanitation regulations can make it. Persons who limit their purchases of milk to "Grade-A" pasteurized milk secured from plants with 90 per cent ratings may, for all practical purposes, rest assured that the milk they are consuming is safe.

The results of the survey certification program carried on by the State Department of Health during the past four years have stimulated and encouraged the enforcement agencies throughout the state toward greater efforts and have enabled the dairy industry to carry on more effective campaigns for increased consumption by focusing attention on the desirability of and need for quality milk and milk products. If properly used, survey evaluations provide consumers and local officials with a basis for judging whether or not they have been receiving a proper return for their milk-sanitation appropriations, and whether such appropriations are adequate. Survey evaluations also protect conscientious officials and milk sanitarians

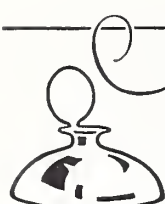
against unwarranted charges that they are inadequately enforcing milk-sanitation laws.

The results of survey evaluations are also used by communities within the state and by communities in other states as a basis for the acceptance of milk from beyond the limits of their routine inspection. Since the beginning of the survey certification program conducted by the State Department of Health, Iowa has rapidly become a leading exporter of raw milk for pasteurization. The high quality of "Grade-A" milk produced in Iowa has opened the markets of other states to this Iowa product. More important, however, than the export of milk, is the fact that there has been no outbreak of milk-borne diseases due to "Grade-A" milk. This is a tribute to the milk sanitarians who supervise the local milk supplies.

"Grade-A" milk is safe milk. For good health, use it!

MORBIDITY REPORT FOR MONTH
OF SEPTEMBER—1959

Disease	1959 Sept.	1959 Aug.	1958 Sept.	Most Cases From These Counties
Diphtheria	0	0	0	
Scarlet fever	70	63	86	Jefferson, Johnson, Polk
Typhoid fever	5	1	3	Black Hawk, Chickasaw
Smallpox	0	0	0	
Measles	13	61	154	Buena Vista, Des Moines, Scott
Whooping cough	22	45	13	Buena Vista, Des Moines, Polk
Brucellosis	10	18	20	
Chickenpox	12	43	5	Boone, Des Moines, Polk, Scott
Meningococcic meningitis	0	0	1	
Mumps	3	34	130	Des Moines
Poliomyelitis	114	133	29	Black Hawk, Dallas, Lee, Polk, Scott, Webster
Infectious hepatitis	9	15	24	Floyd
Rabies in animals	8	24	13	
Malaria	0	0	0	
Psittacosis	0	0	0	
Q fever	0	0	0	
Tuberculosis	27	46	40	For the state
Syphilis	121	137	73	For the state
Gonorrhea	86	101	67	For the state
Histoplasmosis	0	0	2	
Food intoxication	5	0	0	Woodbury
Meningitis (type unspecified)	5	1	0	Johnson
Diphtheria carrier	0	0	0	
Aseptic meningitis	10	4	14	Mahaska, Polk
Salmonellosis	8	7	0	Dubuque, Polk
Tetanus	1	2	0	Howard
Chancroid	0	1	0	
Encephalitis (type unspecified)	2	1	8	Benton, Black Hawk
H. influenzal meningitis	0	1	0	
Amebiasis	1	9	2	Hardin
Shigellosis	1	1	0	Story
Influenza	0	0	1	



Woman's Auxiliary News



OUR PRESIDENT SAYS—

I have just gone over my morning stack of mail. You are familiar with the usual sorting—none from our college son, the waste paper basket for some, a scrap of paper from “The Witches” warning us to keep October 31 open, and some Auxiliary notes giving me dates for visits to you.

At the hospitality room that the Auxiliary maintained at the IAGP meeting in Des Moines recently, I had interesting chats with several doctors’ wives. Mrs. R. B. Widmer, of Winfield, stated that Henry County physicians’ wives meet once a month at the same time their husbands meet, but are enrolled as members-at-large of the Auxiliary. Mrs. V. L. Schlaser, one of the sponsors of the Future Nurses’ Club at East High School, Des Moines, was another of those with whom I talked. Mrs. W. E. Erps, of Storm Lake, a newcomer to Iowa, wonders why Auxiliary members have not sought her participation in the organization’s activities as the Senior Day speakers at Iowa City said they would. Mrs. L. E. Larson, of Decorah, Winneshiek County Auxiliary, suggested that we visit the doctors’ wives there anytime we find it convenient.

Mrs. Nielsen, Mrs. Lammey and I had little time for sleep in our quiet, spacious room at the Drake Hotel during the Fall Conference in Chicago on October 4-7. Since excellent programming at the meeting gave us much to discuss in connection with our own State Auxiliary activities, we were so rushed that we found only one hour for shopping. That brief excursion and a quick trip through the AMA Building constituted our “outside activities.” The business schedule included a fast-moving program of “role playing.” A two-act play, “Ladies in the ‘Lobby’ ” depicted the wrong (“The Ladies Louse It Up”) and the right (“The Women Work Wonders”) technics for the Auxiliary’s legislative activities. Mimeographed copies are available.

At a membership “sales promotion meeting,” the demonstrations of sales technics had all of the professional flavor of the big business, and inspired us to provide our customers (you, the doctors’ wives) with opportunities for taking out insurance on the survival of free medical practice. The “premiums” will consist of helping to mobilize public opinion to oppose the Forand Bill. On the other hand, we can help reassert the preferability of free enter-

prise by participating in non-governmental programs for the care of the aged.

Before I write my next letter to you, I shall have journeyed to Minneapolis to attend the Council on Aging, in company with a local, energetic Jaycee’s wife. I’ll tell you about it next month.

MRS. E. A. LARSEN
President

HIGHLIGHTS OF THE NATIONAL AUXILIARY MEETING

The annual luncheon of the Woman’s Auxiliary to the American Medical Association, honoring Mrs. E. Arthur Underwood, president, and Mrs. Frank Gastineau, president-elect, on Wednesday, June 10, in the Carolina Room of the Hotel Chalfonte, Atlantic City, was an event to be remembered. The tables for eight were beautifully decorated, complementing the general theme.

Following a delicious luncheon, Dr. Louis M. Orr, president of the AMA brought greetings to the group, and the honored guests were introduced.

The guest speaker, Dr. Gunnar Gundersen, immediate past-president of the AMA, suggested “Better Health for All People Everywhere” as an AMA goal, stating that medical affairs in this age of rapid transportation are now international. He cited various miracle drugs which had originated in countries other than the United States, and spoke of the millions of people still afflicted by world diseases such as leprosy, tuberculosis and glaucoma. Dr. Gundersen advocated the establishment of a Foreign Auxiliary for the World Medical Association patterned after the one in the United States, saying that the United States has no corner on medical brains or culture, and that he felt medicine can do more for world peace than can armaments. He closed his talk with a plea for the Auxiliary to study world health problems in order to be well informed on the subject.

Next, Dr. George F. Lull presented the AMEF awards, and Mrs. Karl F. Ritter, chairman of the Auxiliary’s AMEF project, made the presentation of Woman’s Auxiliary AMEF Certificates of Achievement. Mr. Robert Enlow announced the TODAY’S HEALTH awards, and Mrs. Underwood presented the Woman’s Auxiliary contribution of

\$137,000 to the American Medical Education Foundation.

I am sure that the highlight of the 108th Annual Meeting of the AMA and its Auxiliary was President Dwight Eisenhower's address at the AMA's presidential inauguration ceremony, which was attended by an overflow crowd of 5,000. The entrance of the President to Atlantic City and finally to the fourth floor of the Traymore Hotel was interesting and exciting for the 100,000 people who lined his route, and was well worth the time and energy that they had spent in awaiting the event. It was the first time in history that any U. S. president had appeared at an AMA meeting.

Mr. Eisenhower said he was gratified to learn that medical leadership has been set up for meeting the health problems of the aged. He took note of the fact that the AMA had "embarked upon an all-inclusive program to re-orient our thinking about the place of elder citizens in modern society, and to help them meet their health care needs. In health, as elsewhere in American life, our summons to greatness calls for a lively partnership of individual effort, with action by voluntary agencies and private enterprise and, where necessary, government action at appropriate levels."

Mr. Eisenhower expressed special concern regarding unchecked inflation as it applies to older people who live largely on fixed retirement incomes from pensions, savings or insurance policies. He said, "To this group, inflation is not merely a threat; it is a robber and a thief. It takes the bread out of their mouths, the clothes off their backs, and it limits their access to the medical and other facilities they need."

Following the President's address, Dr. Louis M. Orr took the oath of office as 113th president of the AMA. In his address, he too urged the providing of the best medical care to all Americans, but particularly stressed the importance of caring for the older citizen, saying "We must improve and broaden voluntary health programs in preference to compulsory programs that lead to waste."

—MRS. J. W. BILLINGSLEY
Iowa Delegate

FUTURE NURSES' CLUB CONFERENCE

All Future Nurses' Clubs in Iowa are invited to participate in the annual conference to be held at Mercy Hospital Nurses' Home and Hospital, Des Moines, on November 6. It is hoped that every Auxiliary sponsoring a Future Nurses' Club will make every effort to see that four representatives from each club attend.

In addition to the informative program and the tour of Mercy Hospital and Nurses Home, the girls will gain much through meeting and visiting with their contemporaries—girls from other sections of the state who share their intention to

make nursing their profession. The Health Recruitment Committee of the State Auxiliary, in cooperation with a committee of the Polk County Medical Auxiliary, is working hard to make this one of the most interesting conferences in which the girls have shared.

HARVEST OF DOLLARS FOR AMEF

Don't begin to think of Thanksgiving without sending your dollar to your AMEF Chairman. The American Medical Education Foundation helps to continue the good that we of the medical family have done for years—building and helping to maintain medical education without major federal help.

As yet, no goal has been set for our AMEF contributions as a State Auxiliary this year. But we should increase our efforts to raise money for this project, with the idea of exceeding the amounts we have contributed in former years.

AMEF PACKETS

Every county Auxiliary AMEF chairman will receive complete packets from the Auxiliary's Chicago office. Requests for further materials should be addressed to Mr. Earl Dutton, at the AMA Building, 535 North Dearborn Street, Chicago 10.

FOR FUN AND PROFIT

For the AMEF, it is in keeping with national policy to think up new and continue old schemes of fund raising. The fund-raising projects are a splendid means of interesting fellow Auxiliary members and friends in the cause of private support for medical education.

SYMPATHY AND APPRECIATION CARDS

Sympathy and appreciation cards are our best means of adding to our AMEF contribution. These beautiful formal notes, available from the state AMEF chairman, indicate that the sender has honored the friend by making a gift to a cause in which they both have been deeply interested. Sending them is thus far more than a courteous gesture. County AMEF chairmen carry samples of these cards in their pockets or handbags. Ask to see them!

INDIVIDUAL RESPONSIBILITY

The Auxiliary has done a magnificent job for AMEF, deserving all of the appreciation it has received. But it can do much more—and very easily. If each member accepted her responsibility for providing an annual contribution, memorial, appreciation or outright gift, the Auxiliary's total could be doubled! Please remember your individual responsibility.

—MRS. LESTER R. HEGG
State AMEF Chairman
Rock Valley, Iowa

COUNTY AUXILIARIES

Mahaska

The Mahaska County Medical Auxiliary opened its fall program series with a luncheon at Neiswanger's Cafe, in Oskaloosa, on Tuesday, September 8. Mrs. Joseph Lederman, the president, presided, and Mrs. George Atkinson, the state Program Committee chairman, outlined suggestions for projects designed to improve community health, emphasizing services to individuals.

The October meeting was also a luncheon at Neiswanger's. An invitation was extended to several State Auxiliary officers to attend the group's meeting on November 10, when a dinner will be held for the county medical society as well as for the Auxiliary.

The county Auxiliary served tea and punch at the October meeting of the Future Nurses' Club that it sponsors.

Page

The Woman's Auxiliary to the Page County Medical Society met on September 16 at the Clarinda Country Club in conjunction with the annual fall program of the Page County Medical Society. Auxiliary members from throughout the Eleventh Councilor District were its guests, and there were also some doctors' wives from neighboring parts of Missouri and Nebraska. Mr. William Nelson, art instructor in the Clarinda Schools presented a program in the afternoon, and the Auxiliary and its guests joined the doctors for the social hour and dinner, at which Dr. Daniel Stone, an Englishman at the State University of Iowa, was the guest speaker.

Miss Gail Flynn, daughter of Dr. and Mrs. Charles H. Flynn, of Clarinda, is taking a Red Cross orientation course in Charlottesville, Virginia, after which she will do Red Cross work at the Fitzsimons Army Hospital, in Denver. Gail graduated from the University of Nebraska last June.

Mr. Allan Frenkel, son of Dr. and Mrs. H. S. Frenkel, of Clarinda, has resumed his studies at S.U.I.

Polk

The Auxiliary to the Polk County Medical Society met for luncheon at the Standard Club, in Des Moines, on Friday, October 9. W. W. Morris, Ph.D., director of the S.U.I. Institute of Gerontology, spoke on "The Coming-of-Age of Aging." Dr. Morris was introduced by Dr. Walter L. Biering, director of the Division of Geriatrics of the State Department of Health. Following the program, Mrs. Louis Goldberg, the president, conducted a business meeting. Mrs. C. H. Gutenkauf was in charge of the program.

THE MIDWEST REGIONAL COUNCIL OF STATE LEAGUES FOR NURSING

The Iowa State Medical Society and its Auxiliary, both vitally interested in health careers recruitment, will have representatives in attendance at the Regional Careers Workshop of the Midwest Regional Council of State Leagues for Nursing. The meeting is to take place on November 20-21 at the Pick-Congress Hotel, Chicago.

The program promises many "take home" ideas for use in our own communities. "What Lies Ahead," "Utilizing Community Resources for Effective Action" and "The Careers Committee and Future Nurses' Clubs" are just a few of the topics. Those who attend the meeting will pass the ideas on to the Auxiliary membership in the near future.

AMEF Note Paper and Envelopes

\$1.00 for a pack of 10 each

Order from Mrs. Robert Updegraff

630 Foster Drive

Des Moines 12, Iowa

Proceeds will be donated to the American
Medical Education Fund

WOMAN'S AUXILIARY TO THE IOWA STATE MEDICAL SOCIETY

President—Mrs. E. A. Larsen, 323 Oak Street, Centerville
President-Elect—Mrs. R. F. Nielsen, 919 Washington Street, Cedar Falls

Secretary—Mrs. L. F. Henderson, 304 Seerley Street, Cedar Falls

Treasurer—Mrs. J. H. Matheson, 4321 California Drive, Des Moines 12

Editor of THE NEWS—Mrs. H. C. Merillat, 116 Lincoln Place Drive, Des Moines 12

Doctors Must Become Politically Active

HON. THOMAS B. CURTIS

ST. LOUIS, MISSOURI

IT IS A VERY interesting thing to me that today the term *politician* has overtones of degradation. It seems that people think there is something a little bit wrong, or shady, about being a politician. Let's make one thing very clear: I am a politician, and I am proud of it! I think politics is an honorable profession, and I think that the way to make a profession honorable in the eyes of other people is to perform honorably in it.

A derisive name that has been applied to any individual or group is quite capable of being turned into a designation of respect. In this connection, I like to think of the Society of Friends, whose more familiar name, "the Quakers," was originally intended quite uncomplimentarily. Nowadays, the term *Quaker* is altogether respectful, and it is the members of that sect who, by their completely praiseworthy behavior, have been responsible for that fact.

The term *lobbyist*, in this country, has overtones of degradation, and yet lobbying is a very essential fundamental of representative government. Moreover, it is a *good* part of it. Without good lobbying, there cannot be representative government. So important are lobbies to representative government, that in writing the Constitution our forefathers set forth this right as one of the cardinal privileges that had to be guaranteed to the people—the right to petition the Congress. When you analyze it, you find that the right to petition the Congress is no more nor less than the right to lobby.

POLITICS HASN'T ACQUIRED A BAD NAME BY ACCIDENT

From where does the degradation in the term *lobbyist* and in the term *politician* come? I think that during our hearings on the Forand Bill before the Ways and Means Committee, this spring in Washington, D. C., we had some inkling of at least some of the elements that are trying to downgrade representative government in this country by discouraging our citizens from being politically active. I think that such is their purpose, but who are the people who are doing this?

The representatives of the American Medical Association testified before the Ways and Means

Mr. Curtis, a representative in Congress from Missouri and a member of the House Ways and Means Committee before which the hearings on the Forand Bill were held last summer, explains why this is the time for every doctor to enter the fight against big spending generally and against government medicine in particular.

He delivered this address in Des Moines on November 8, at the Iowa State Medical Society's Special Conference on Legislation.

Committee, and they did a splendid job, I might state. Also testifying before the Ways and Means Committee on this subject—as well as on almost every other subject under the sun—were the representatives of the Political Action Committee of the CIO-AFL, headed by Mr. Walter Reuther. In my judgment, Mr. Reuther is not a labor leader, but a politician who very cleverly figured out that power in the Twentieth Century

was going to come to those who were able to organize labor for political action. The CIO representatives had started tearing down the American Medical Association for being politically active; and one of their allies, if I may say so (and he is a friend of mine), Mr. Aime Forand, the congressman from Rhode Island, in interrogating representatives of the American Medical Association began to impugn their motives and their techniques, insinuating that they were being politically active and that they actually were getting the doctors interested in being politically active. I was very proud of the AMA witness in that instance. He said, "Sure, we have been doing that. What's wrong with it?" At that point I turned to my colleague from Rhode Island and repeated the question: "All right, what is *wrong* with that? You name the specific incident, technic or method used that you regard as improper."

Indeed, there are unjustifiable lobbying techniques, and those are what one should concentrate upon when he criticizes lobbying—the improper techniques, not the activity itself, that of petitioning the Congress and expressing a viewpoint. When I tried to pin Mr. Forand down regarding which activities of the AMA he regarded as objectionable, he wouldn't go any further. He said, "I'm not going to reveal my sources and tell why I say the AMA has been using improper techniques." I then said, "If you want to leave it there, well all right. But that is what I call character assassination. That is what I call the smear technic." And it is a smear technic!

Certainly if Walter Reuther and his allies can persuade all other citizens *not* to be politically active, the arena will be left to him and his group.

And that is just about what has been happening in America during the past few decades. Good people have been driven out of politics.

Good people won't become active in politics because they have been made to think that there is something a little bit shady about it. They haven't realized the very basic truth that if we are to preserve liberty, we can do so only by exercising eternal vigilance. And if we are going to have government *by* the people, the people must partake of it. And if government *by* the people goes by the boards, I can assure you that government for the people will eventually disappear, too.

Of course there are people who say, "The people do not have to participate. We'll take care of them. We'll help them. We'll do all of the good things for them." But once government *by* the people goes by the boards, sooner or later government for the people goes by too.

PEOPLE CAN'T AFFORD TO BE INACTIVE POLITICALLY

It isn't a question of whether we have the time to be politically active; the question is whether we can afford *not* to take the time, and we cannot if we are to preserve our representative form of government. If we are to preserve the values that were passed on to us by our forefathers, we must work to preserve them. I have often said that the difference between the attitudes of Mr. Reuther and his associates, on the one hand, and those of the more conscientious leaders on the other, is that the labor leaders have tried to sell our citizens on the proposition that this is labor's country, that the federal treasury is labor's treasury, and that labor is entitled to whatever it demands. "Why talk about deficit financing?" they ask. "It doesn't matter how much the national debt is, for we owe it just to ourselves."

I maintain that citizenship is not an individual, personal privilege that one can neglect at will. Citizenship is a trusteeship. Our fathers, grandfathers and great-grandfathers approached citizenship as a trusteeship—a trusteeship for the people who cannot vote, for children under the age of 21, for people who have become patients in hospitals, old-age homes and so forth, and for generations as yet unborn. Citizenship is a trusteeship in behalf of all those people. We are bound to consider and to protect their welfare and their interests. Citizenship is a precious heritage in our hands, to utilize in such a way that we don't devalue the dollar, much less drive our nation into bankruptcy. This generation, in my judgment, has defaulted on that trusteeship.

One other thought along those lines. People say, "What of America's vast material wealth?" America still has vast material resources, and, I believe, a great residuum of spiritual wealth as well. On analysis, we ought to take pride and be thankful to those who planted this harvest and to those who cultivated it. All that we are doing now is reaping. If we want to take pride, let's think about what we are sowing, and what we are tending and cultivating that future generations are going to

reap. In that context, I don't know that we have very much in which we are justified in taking pride!

The American people seem to be genuinely concerned about inflation. The genuineness of their concern is borne out by the fact that they now relate inflation to federal expenditures and federal taxes. There was a time when a political philosophy of "tax and tax," and "spend and spend" did mean "elect and elect." Those were the days when wealth, in the United States, was distributed in sufficient disproportion so that those on the short end of the stick looked upon the federal government as an efficient device for redistributing the wealth. Those on the short end of the stick were then sufficiently numerous so that, when united in a common purpose, they became a majority at the elections. However, today, when the wealth is more evenly distributed—and incidentally, 70 per cent of our people are now home owners—and nowadays when the federal tax load rests primarily on the overwhelming majority of the people instead of on the rich, it has become apparent that the federal government is no longer the efficient device for redistributing wealth that it once was. At least the federal government, in bringing about a redistribution of wealth, is no longer redistributing from richer to poorer but is redistributing it in accordance with no recognizable formula, unless it can be said to be taking from those who have not learned to use political power and giving to those who have mastered that art. Redistribution in accordance with such a political formula, however, is hardly one that will gain the support of a majority of the people at the polls, at least when they have come to recognize what has happened. On the contrary, when it becomes more widely known that this is the effect of the federal government's redistributing the wealth, the majority of the people will oppose the political philosophy of federal expenditures and federal taxation unrelated, as it has been, to the wisdom of the expenditures and unrelated to the efficiency of the disbursements in achieving the purpose sought.

I am only hopeful that this is what happened in this last session of the Congress—that the people really began to recognize these things, and that for these reasons the President's appeal for a balanced budget met with some real response from the people of the country, to the extent that this Congress did stand up in a fair fashion and cut back the bold, imaginative program which Lyndon Johnson had outlined for us back in January, one which would have cost us \$15,000,000,000 or \$16,000,000,000 over and above the budget that the President proposed.

NOW IS THE TIME FOR THE PRUDENT MAN TO SPEAK UP

The real test will come during this next session of Congress, which will be held in a "political year," when the people's voice will be listened for intently, and when the congressmen will try to figure out the wishes of the people—by whom I mean those who are active politically. If your

voices and those of others who think as you do are to be heard, they can be heard only through political action.

If what I have said is true, and I believe that it is, it should be a source of great comfort to the medical profession in its fight against what it has properly described as socialized medicine. If what I have said is true, then we can begin to discuss federal expenditures on the basis that we *should* use when we discuss them, and not on the emotional and irrational basis of the past, one which reflected the cultivated belief that almost any federal expenditure, for whatever purpose, meant a redistribution of the wealth from those who have to those who have not.

Now, I have not said that the medical profession has won its fight against the various proposals for having the federal government spend federally collected taxes in the medical field. I have stated merely that now the medical profession can get a rational debate on the merits and demerits of federal expenditures in these areas. It will no longer be fighting against a hidden but powerful emotion in the breasts of the majority of the American people, one which led them to look upon federal expenditures as being invariably of more benefit than harm to themselves, personally, inasmuch as they were not the ones who must pay more for them than they were likely to receive in return.

Incidentally, in its fight on these issues, the medical profession began to experience something with which politicians had long been familiar. Doctors were sniped at in an attempt to undermine their integrity, so that today many people think that their doctors are enemies of progress even in the field of health betterment and the problems that are involved in it. But those are the sorts of attack that anyone must withstand who gets in the way of the devotees of the "spend and spend" philosophy.

THE AMA CAN BE PROUD OF ITS AFFIRMATIVE PROGRAM

Let me say that I am delighted over the fact that the American Medical Association has developed

an affirmative program. I have talked with its representatives over a period of several years on the importance of its doing so. Indeed, one of the great arguments that they used in opposing the Forand Bill consisted of a review of the affirmative steps that are being taken in providing health care for the aged through the free-enterprise system. That has been a very fine thing for physicians from a public relations standpoint.

THE SO-CALLED "LIBERALS" ARE TODAY'S REACTIONARIES

It is to be noted that the old New Dealers—today's reactionaries—want us to go back to the old days. That is an interesting thing, and I shall repeat it: The so-called liberals are today's reactionaries. They want us to go back to the old days of "spend and spend," and "tax and tax."

These people still use indigency as a lever for getting most of their programs enacted into law. It of course is true that some of the younger members of this reactionary crowd, realizing that indigency in the United States hasn't the meaning that it had in the 1930's, have latched onto another crowbar—the fear of Russia. It is important to realize that these people are not so lacking in intelligence that they are willing to try creating their devices out of thin air. There still is such a thing as indigency, and it is a real social problem. Likewise, there is such a thing as the Russian threat. The important question is whether they will be able to use these implements with such effectiveness that rationality again is made to give way to emotion, and so that federal expenditure again becomes synonymous with achieving solutions for the problem or the threat.

If anyone questions that this is occurring, I might state that if he had sat and listened through the committee hearings and the floor debate on these issues, over the past 10 years, he would have seen this subtle switch as it took place.

It is true that there is another emotional argument for federal health programs. That is the tendency of all human beings to regard death and disease as social, and indeed as personal, enemies. This emotion, like the others, must be channeled



in the right direction. These neo-federalists—the reactionaries of whom I have been speaking—must not be allowed to make federal expenditure synonymous with fighting the enemy. I am afraid they have already accomplished a great deal in their attempt to establish that synonymy. In other words, they have already convinced a great many people that a congressman's vote in favor of spending federal funds for health programs is a vote in favor of health, and that another congressman's vote against these proposals is nothing more nor less than a vote in favor of disease. The enormous increase in the appropriations for the National Institutes of Health, in my judgment, reflects primarily the success these people have achieved in this venture into semantics.

As we attempt to meet this problem, it is important for us to realize that counteracting the emotion is always the first stage of action. Counteracting the emotion always puts us in the position of rationally considering the question of how our society can best meet the social enemies disease and death. If not through federal expenditures, then how *can* it be done? That is where the AMA's affirmative program must come.

I think it is very important that we refrain from condemning federal spending *per se*. Simply because some of us see the damage it has caused, we can't expect to convince people that future spending will be similarly wasteful or similarly ineffective. It is important that we consider the proposals individually and upon their separate merits, showing where federal spending can and should be used, and where it should not.

SOME PRICE INCREASES HAVEN'T RESULTED FROM INFLATION

There is another public emotion which doctors must face in dealing with the problems involved in the relations between their profession and the government. Now that the people are alert to the dangers of inflation, they have become concerned about the prices of the goods and services they must purchase, items which go to make up the cost of living increases which they assume are identical with inflation. But all cost-of-living increases aren't *necessarily* the results of inflation. The general public is not alone in making this mistake. Many professional economists seem to view the two phenomena as interchangeable.

I shall discuss the difference between the two, with particular reference to medical costs, but first let me say that I am certain the medical profession is aware of the fact that the doctors, hospitals, the pharmaceutical industry and other businesses related to health have acquired, to some extent, the bad name of major contributors to cost-of-living increases. Perversely, the neo-federalists use this increased-cost item as a further argument for concentrating more power in the hands of the federal government. At the slightest indication of

any economic disturbance, these people have urged price controls. And so effective have they been in their propaganda—and this is a little bit of Republicanism, if I may be pardoned it—that in a recent Gallup poll a majority of people, when asked which of the parties they thought is most concerned about keeping prices down, chose the Democratic Party. I couldn't quite understand that until I remembered that the neo-federalists are the ones who have created this image in the public's mind. They have advocated price controls. People have forgotten that the thing which has made prices go up—insofar as the inflationary aspects are concerned—has been this business of deficit financing, the government's spending more money than it takes in through taxes. Of course there is only one way of making up such a deficit, and that is the printing of more money. That is what we have been doing, and that is why we now have a 50-cent dollar.

Now let me get back to the justifiably increased costs of hospital rooms, doctors' care, drugs and nursing services as contrasted with inflationary price rises in many other goods and services. Health care costs have all increased rapidly since World War II, probably more than any other set of costs that are used in compiling the cost-of-living index, and that is why these neo-federalists can view them with such alarm. But costs are only one side of the coin. The other side is the improved quality of the products or the services that are offered. In the cost-of-living index today—the one compiled and published by the Bureau of Labor Statistics—a day in the hospital is treated as an invariable unit, whether that day was spent in 1920 or in 1959. Did one get the same results from a day in the hospital 39 or 40 years ago that he can get today? Hardly so. Improved equipment, medical knowledge, drugs, etc., have reduced the lengths of hospitalizations. And at the end of their hospital stays, many more people now come out under their own power rather than in boxes. Furthermore, the vast majority of our people use hospitals today, whereas formerly the hospital was almost a luxury. Such institutions then were used only by people of adequate means and people located in or near the cities.

In the Joint Economic Committee, on which I am the ranking Republican, we have just completed hearings on this subject of economic growth in relation to price stability and in relation to employment. These same neo-federalists criticize us for not growing rapidly enough in this country in relation to Russia—an idea of questionable validity, in the first place. In farm technology, the advances have been so rapid that any economist will call them a revolution, and the developments in medicine have been just as stupendous.

What happens when rapid growth takes place? A great many skills and a great many pieces of equipment are suddenly rendered obsolete. A great

deal more money is required for research and development, and for education. There are bound to be increased costs in any such field. If we want more rapid growth, I don't want to hear anyone complaining about the fact that increased costs are involved. But the universal truth that progress is always a big-ticket item, I am afraid, hasn't been generally understood in this country.

Inflation in its economic sense, means the debasing of the currency. An article costs more because the dollar has changed in its purchasing power. But inflation is not the only thing that can bring about a rise in price. The cost can rise because the item has been improved. In some instances a greater value can be offered at the same price as the result of increased productivity, but in the medical field there is no real way of achieving a fundamental increase in productivity, for we are dealing with individual human beings. In the drug field, perhaps, some degree of increased productivity can be achieved, together with resultant savings, and there may have been some savings in the human health services from the greater efficiency that results from there being more people ready and anxious to buy such services than ever before. On the other hand, however, there has been a tremendous technological improvement in this field, and that improvement has been expensive.

THERE STILL ARE SERIOUS PROBLEMS AWAITING SOLUTION

The question that the public should be asking itself is not whether the price has risen, but whether what it is getting is worth the increased cost. I doubt that anyone would begrudge the \$10 we pay for one of the new "myacins," and choose instead to buy a patent medicine for \$1 a bottle. Politically, however, even though the wonder drugs are available, if a certain segment of our population cannot afford them, we are in a serious predicament.

As I have pointed out, the advocates of socialized medicine have been basing arguments for their program on such things as indigency, Russia, fear of disease and excessive costs, and even though all of these arguments of theirs are emotional and ill-founded, the question that confronts us is how our society can move ahead in combatting the real problems of indigency, Russia, disease and costs. First, I think we must recognize that the paths to these goals are many. Indeed the path toward a decrease in costs is definitely going in a different direction from that which we must follow if we seek to do a more nearly complete job of eradicating disease. We want more, rather than less, research and development, and those things cost money. And further research and development, further education, and more obsolescence, rather than less, are sure to aggravate the problem of medical indigency.

In respect to the first two of these goals, our society through the private hospitals, the privately-

operated medical profession, the private pharmaceutical industry, and the nursing profession, has done an amazing job during the past few decades. Never before in the history of the world has there been such an advancement in combatting disease. I see no argument—no reason whatsoever—for anyone's saying we are not going fast enough under our present set-up. Therefore, the arguments for more federal expenditure in this area not only seem without foundation but seem bound to create damage.

Indeed, by going as fast as we have in this area, we have aggravated the problems of cost and indigency. Our people now live 15 years longer as a result of advancements in technology in the health field, but there has been no planning for the financing of those extra years. When people over 65 today were starting out in their productive lives, they based their savings plans, consciously or unconsciously, upon the average life expectancy of that time. Increased costs, both from the increased standard of living and from unadulterated inflation have badly damaged what planning they could do, entirely apart from the extra 15 years which they have been called upon to finance.

The federal government, by its own default—by its improper handling of the fiscal affairs of the nation—has aggravated the problem almost as much as technological advancements have. The federal government's basic contribution to economic affairs should be to maintain the dollar as an accurate measuring stick for human labor, ideas and savings. And I think that before we call upon the federal government to do anything more in the field of solving the problems of cost, we need to call upon it to do its basic job—that of preserving the dollar as an accurate yardstick. If the government does not do this, it is almost impossible to solve the problem of costs.

The advocates of letting the federal government solve the problem of increased costs claim that theirs is the only method of spreading the costs among all of our citizens. I asked the AFL-CIO representative at the recent hearings on the Forand Bill what difference there could be between the federal government's insurance and private insurance. Although he had been spending a great deal of time testifying on the subject of the Forand Bill, he then suddenly discovered that he was taking time from other witnesses, and said he thought he didn't have time to answer the question. Yet this is a basic question and one that needs answering: What is the difference between spreading the risk through federal insurance and spreading the risk through private insurance companies? Well first of all, the private insurance companies must deal with people who can afford to pay for the coverage, and therefore they cannot seek a solution for the problem of indigency. Should the problem of indigency become involved in the problem of spreading the risk among the bulk of

our citizens, the 95 per cent who are not indigent? I certainly think not! In fact, by failing to separate the problem of indigency from the problems of insurance, we impede our progress in meeting the problem of indigency and the problems of cost.

There is a second difference between federal insurance and private insurance. Whichever sector of society is used, government or private, an insurance program requires capital formation. There is only one way for the government to acquire capital, and that is through taxation. But any time that the government provides the capital formation, it withdraws both the capital and the insurance operation itself from the tax base. Thus, it leaves the problem of future taxation more difficult.

THE NEO-FEDERALISTS ARE READYING A NEW AND DIABOLICAL PROPOSAL

Furthermore, and possibly even more important, in the formation of insurance capital, the capital must be invested. Government cannot invest—or let us say has not thus far invested—in anything other than its own securities. Private enterprise, on the other hand, properly invests its funds in the economic growth of our society. The government's investments are sterile, as well as withdrawn from the tax base. Moreover government capital formation does a great deal of damage.

A realization of the sterility of government investment in its own securities has stimulated these neo-federalists—always looking, as I have said, for any argument for placing more power in the hands of the central government—to suggest that this money be invested in federal public works bonds. Walter Reuther has made that suggestion, among others. I'll leave it up to you to imagine the complications and economic damage that would result from the government's going into the investment field. The time will soon come when we shan't be able to confine ourselves to imagining, and must spell out the details of this damage, for this proposal of Reuther's is a real threat today.

THE HEALTH PROBLEMS OF THE AGED AREN'T PECULIAR TO THEM

Now just as I have praised the doctors, I praise the private insurance companies for having done a tremendous job during the past few decades in meeting the problem of spending costs in the field of health. However, the job has not been sufficiently good to keep up with the needs resulting from the great technological revolution in the field of health. On the other hand, I do believe that we are reaching a plateau, and that future advancements may not be so great as those of the past. If I am correct, we shall have a breather.

In all of the advancements that have extended the life-expectancy, interestingly enough, there has been nothing to extend the maximum life span of man. It shall remain at about 115 years. All of

the advancements have served merely to help greater numbers of men and women approximate this goal. Death, rather than disease, has been thought the social enemy, but now that death is being unmasked, the philosophers are again asking whether death really is the social enemy that we have assumed it to be. We have made our assumption in direct conflict, I might state, with the religion we profess—one which does not regard death as a social enemy. Sudden death through accident or disease may be such under the tenets of our religion, but accident and disease are the enemies, not death itself.

Finally I come to the question of indigency. I was greatly impressed with the testimony that the AMA representative gave at the Forand hearings when they pointed out that inadequate health services are disadvantageous to all of the people in a geographic area, rather than just to a particular age group. In other words, where health services aren't all that they might be, everyone suffers, not just the aged. In a community where medical facilities are good, the entire community benefits.

This, to my mind, quite clearly demonstrates that to treat indigency by singling out a particular age group for special help is to adopt the wrong approach to the problem. For this reason, the Forand Bill, which seeks to treat an inability to pay for health facilities on the basis of age, is basically in error. It will hurt rather than help in meeting the problem of indigency.

Furthermore, as I have previously suggested, because the Forand Bill mixes the relieving of indigency with the spreading of the costs to those who can afford to pay, it interferes with the solution of the problem of indigency and it also interferes with the solution of the cost problem which confronts the 98 per cent of our people who aren't indigents.

Indigency should not be equated with a particular age group, housing group, educational level or anything else. If a person is indigent, he is in need of everything—health care, housing, food and all other things, possibly including love and affection. Thus, indigency must be dealt with on an individual basis, and it must not be confused with other social problems.

What are the causes of indigency? There is such a thing as community indigency, and there also is individual indigency. The two are separate, and likewise should not be confused if we wish to solve them. Community indigency is largely a problem of economics, and should be kept in the field of economics for solution. The federal government can be of assistance in some degree, but I suggest that it can be helpful primarily by working on the economic climate, not by intervening directly. Direct federal intervention can create more problems than it can solve. Individual indigency is a separate thing and we must ponder it a great deal more carefully than we have in the past.

Jesus said, "The poor shall always be with us," and I believe I understand what he meant. It wasn't community poverty that he was referring to. I believe he had reference to the poor of mind, or to those poor in talents. We have—and always will have—many people with IQ's below 90, people who appear as competent as anyone else, but who lack talents and are a prey for anyone who will take advantage of them. I believe that these poor must be cared for, but on an individual rather than on a group and on a political basis.

Ministering to the poor has always been a favorite technic of politicians in winning elections. But ministering to the poor should be a matter of charity, not politics, and I use the word *charity* in its finest sense. I believe that the problems of individual indigency should be left essentially to our community chest agencies, to our families and to our churches. Government can help the indigent *through* these private agencies. It is in this field that the doctors and the other members of

the health professions have been doing a magnificent job, but their light has been hidden under a bushel.

CONCLUSION

Fortunately, the problem of community indigency is being solved in the United States. There is still work to be done, but I believe our society is getting on top of this problem. The problems of indigency are by no means beyond the capabilities of the 98 per cent of the American people who are not individually indigent. But to succeed, that 98 per cent must keep their thinking straight, and must keep from confusing the problems of the poor with other difficulties.

Much needs to be done in the field of health, but much is being done. That goose which produces the golden eggs must be nourished and cherished. The impatience and greed which the neo-federalists exhibit can produce only death for the goose and an end to the flow of golden eggs.

Postgraduate Conference in Surgery at S.U.I.

Following is the program for the Postgraduate Conference on Surgery that is to be presented at the S.U.I. College of Medicine, in Iowa City, on Tuesday and Wednesday, December 8 and 9. The registration fee will be \$25, which amount will include the luncheons but not the dinner Tuesday evening. The University Theatre is to present the Clifford Odets play "Awake and Sing" at 8:00 p.m. on Wednesday.

The IAGP has approved the course for Category I credit.

Tuesday, December 8

SURGICAL COMPLICATIONS: PATHOGENESIS AND CONTROL

- 8:30 a.m. Registration
- 9:00 Welcome—Dean Norman B. Nelson
Welcome—Dr. Robert T. Tidrick
- 9:15 "Introduction of the Problem and Résumé of One Year's Complications"—Dr. Robert C. Hickey
- 9:30 "The Surgeon's Problem—Infections!"—Dr. Tidrick
- 10:00 "Hemorrhage, Anticipation and Control"—Dr. Joseph A. Buckwalter
- 11:00 "Thrombosis and Embolization"—Dr. Sidney E. Ziffren
- 11:30 "Preventable Complications, the Anesthesiologist's Role"—Dr. William K. Hamilton
- 12:00 m. "Metabolic Upsets on the Surgical Wards"—Dr. Edward E. Mason

PANCREATIC DISEASE

- 1:45 p.m. "Surgical Anatomy of the Pancreas"—Dr. Edgar S. Brintnall
- 2:10 "Pharmaceutical Drugs and the Pancreas"—John P. Long, Ph.D., associate professor of pharmacology

- 2:35 "Surgical Pathology of the Pancreas"—Dr. Emory D. Warner
- 3:15 "Conservative Treatment of Pancreatic Disease"—Dr. John A. Gius
- 4:00 "Surgical Therapy of Pancreatic Disease"—Dr. John M. Waugh, chief of surgery, Mayo Clinic
- 6:15 Social Hour and Banquet—University Athletic Club
- "Casualties in Nuclear Weapon Warfare"—Lt. Col. Joseph D. Goldstein, M.C., chief of the Department of Atomic Casualties Studies, Walter Reed Army Medical Center

Wednesday, December 9

INJURIES TO THE UPPER EXTREMITY

- 9:00 a.m. "Surgical Infections of the Hand"—Dr. Ziffren
- 9:30 "Traumatic Injuries of the Hand and Forearm in Industry"—Dr. Minot P. Fryer, assistant clinical professor of surgery, Washington University, St. Louis
- 11:00 "Late Repair of Nerve Injuries"—Dr. George E. Perret
- 11:30 "The Special Problem of Elbow Injuries"—Dr. Ignacio V. Ponseti
- 12:00 m. "Injuries to Small Bones of the Hand"—Dr. Adrian E. Flatt
- 1:45 p.m. ROUND THE ROOM SEMINAR
Part A—Questions to the speakers
Part B (2:30 p.m.)—Controversial Problems in General Surgery, Case Presentation
Dr. Johann L. Ehrenhaft, moderator
Dr. Tidrick
Dr. Waugh
Dr. Brintnall
Dr. L. T. Palumbo
- 4:00 CLINICAL PATHOLOGIC CONFERENCE—Dr. Waugh

A Glimpse At Medicine Behind the Iron Curtain

FRED STERNAGEL, M.D.

WEST DES MOINES

IN THE ONCE-forbidden land of the Soviets, people now have a great deal as compared with their ancestors 100 years ago, but still lack innumerable comforts, conveniences and even necessities that are parts of our daily living in America. The Russians point with pride to the gains they have achieved during the past generation, but those accomplishments are wholly inadequate to meet the needs of most of the men, women and children in their country.

Last August I was privileged to accompany 12 other physicians and two travel agents on a tour behind the Iron Curtain, under the sponsorship of the World Medical Association. Mrs. Sternagel and some of the other doctors' wives accompanied us. Our principal purpose was to observe how

medicine is practiced nowadays in the cities of Kiev, Leningrad, Moscow and Prague.

I am told that if one wants to make an impression on the home folks after visiting a foreign land, he should look up all the available literature on that country and then write his story. But I am not following that advice. Rather, I propose to present no more than my own experiences and observations, with an occasional conclusion—like-wise my own. I am making this contribution with the hope that if enough other doctors record their honest individual appraisals of Russia and the medicine that is practiced there, all of us will have a better knowledge and understanding of that truly strange land.

I am grateful for the privilege granted my col-



An unusual picture of the Kremlin, taken from the Great Stone Bridge.

From Dr. Sternagel's Notebook

GENERAL

Though the official exchange was 10 rubles for a dollar, the purchasing value of 10 rubles was only 60c.

The basic wage in Russia is about \$750 per year (7,500 rubles). Airline hostesses get \$1,400 (14,000 rubles); truck drivers \$1,300 (13,000 rubles); nurses \$600 (6,000 rubles); doctors before degree (12 years) \$800 (8,000 rubles); professors \$3,000 per year before taxes.

Nothing that isn't raised or manufactured in Russia is available anywhere in the country.

All goods and prices are standardized throughout Russia, even those on menus.

No one rides bicycles. They are available, but too high priced.

No one smokes, and only foreigners drink alcoholic beverages, again because of the high prices.

About 40 per cent of Russians are card-carrying communists.

The Russian people are proud, and won't accept tips or gifts without offering a present in return.

Religion is frowned upon by the government. Almost none of the younger generation attend church.

MEDICAL

From 60 to 70 per cent of doctors are women.

There are absolutely no doctors in private practice.

There is no direct payment for hospital or medical care.

Drugs, eye glasses and prostheses are purchased at state stores.

Professional training and education are free, but are identified with party politics.

Polyclinic physicians must do all of their own paper and laboratory work.

Except for surgery, therapy is mostly palliative.

The general quality of medical care is far below ours.

There is a crazy mixture of new and old methods—mostly old.

Hospitals are poorly planned and equipped, if one judges by our standards.

There are no general nurses as we know them. Doctors in attendance administer their own therapies. Some specially trained nurses work with surgeons, administer care to the newborn, etc.

Eighty per cent of surgery is done under local anesthesia.

Almost all births take place in hospitals. Midwives deliver all but the complicated cases. All mothers are kept in hospitals for 10 days postpartum, and no one—not even husbands—may visit them there. Babies are kept swaddled for six months.

Eighty per cent of mothers are delivered without analgesia or anesthesia.

Abortion was re-legalized in 1956. The rate is about 85 per cent of births in some areas. It probably is performed selectively—on persons of low intelligence.

Russian doctors have great respect for sepsis, and patients are clean and well cared for.

The younger Russian doctors are well educated, and generally the doctors seem to be good diagnosticians.

Suggestion therapy is used more frequently in Russia than in America.

Sign: "Damage to the health of workers is less harmful than damage to production."

The behavior of a card-carrying communist doctor is different from that of clinicians.

The medical hierarchy in Russia dictates everything that happens in medicine there.

"The committee," often mentioned, controls all medical practice and hospitals from Moscow, through its subsidiaries.

leagues and me by the Russian government—for entrance to Russia is still quite hesitantly granted, to say the least—and I appreciate the friendliness of the people of Russia who did their best to make our trip enjoyable. The physicians whom we were privileged to meet were extremely cordial and hospitable, and I have returned home with an improved understanding of their problems and hardships.

THE ENVIRONMENT OF RUSSIAN MEDICAL PRACTICE

Before I give my impressions of Russian medical practice, permit me a brief review of my observations of the country itself and of the environment in which Russian doctors practice. Of course no article of this length could include anything but the most important features of this adventure.

The liberation of the Russian people from slavery and serfdom occurred 100 years ago. In 1917, the last of the czars was deposed, and after a civil war lasting five years, a new government was established. Yet today, the Russian people are slaves of their government in everything other than name. They have nothing they can call their own. They are forbidden to work for themselves. The government for which they work owns even the carts on the street. They work at wages that are barely sufficient to provide a meager living. Socially, there is no difference between the most intellectual and the most worthless or mentally retarded individual. The people have nothing to look forward to other than hard work and promised comforts, and the promises remain unfulfilled year after year.

The government officials, who are actually the masters, realize that to prevent unrest they must keep the people content, and they try to achieve that objective in a variety of ways. They like constantly to remind the public of the fate of "hoodlums." In addition to the meager wages that they are paid, the people are offered rewards such as vacations, travel, medals and certificates for meeting or exceeding quotas, or for accomplishing something spectacular. The recipients of these extra favors can be identified in all of the larger cities, and especially in parks, museums, and other show and recreation places. They can even be seen in hospitals and spas, where doctors—under orders from high authority, I am sure—grant them special consideration.

Everywhere, there are posters extolling national heroes, and likewise everywhere there are monuments to Lenin and Khrushchev, but strangely few monuments remain to Stalin. Exhibits and displays have been created to impress the people with the Utopia that will be theirs in a few years, and of course there are shrines to modern heroes like those in and around the Kremlin. All of these, of course, are intended for propaganda purposes and to back up the boasts of the master caste. We saw only models of sputniks, atom



This is Moscow University, but I might almost as well have called it a picture of our hotel in the Russian capital. Architecturally, the two buildings are so alike that I was sometimes in doubt about which was which.

bombs and ice breakers, but we did ride on one of the crack Russian trains between Leningrad and Moscow, and on many of the jet planes there. To be sure, these transportation facilities are very good, but we have better. We could not miss observing the great building activity all about us in the cities—mostly huge public buildings and multiple apartments replacing bombed-out structures and former slums. Some of these buildings were impressive only from the exterior—as was the case with our hotels.

The subways in Leningrad and Moscow are out of this world in beauty, and these and other things seemed on display to impress tourists and the vacationing medal-bearers who visit the larger centers. Moscow has the best showcases of them all. The tombs of Lenin and Stalin on one side of Red Square are visited by thousands of people. They line up for miles every day to see the plaques erected in memory of communist heroes and the wax figures of their two principal idols on the tops of their caskets. Directly across the street is a huge department store—the only one in Moscow—running over with shoddy merchandise of every description, all made in Russia and for sale at exorbitant prices that no one can afford. The Russians are left to understand that they can

have all of those things in the near future if they are good boys and girls, and if they work hard for the state.

Of all the sights there are to be seen in Russia, the agricultural exhibit at Moscow is probably the most impressive. It covers several square miles, consists of permanent buildings and exposition halls, and contains the products of every conceivable human endeavor—government, farming, oil drilling, etc. The medical building contained samples of everything I had ever heard of in the line of medical supplies and equipment, and thousands of people were milling around the exhibits every day. Whenever a Russian tells you that his country has everything, you can believe him. A little bit of everything is there in that one place, but that doesn't mean that they are to be seen anywhere else! All of this may impress the natives, but the foreigner with any intelligence isn't misled.

One can't help wondering about all of the poor people who make up the bulk of the population. For the future, they have nothing but the hope that some day they may enjoy the things that they have seen on display. They look the part of a discouraged and disappointed people. Generally they are dour, slow moving, timid, withdrawn,

without a spark of ambition or incentive to work, and irresponsible in so far as services to us were concerned. They live in cramped quarters without any of the ordinary comforts to which we are accustomed in America. Commodities, utensils and other things outside of those that are absolutely essential for living are not procurable even in the best stores, and if what one wants isn't produced in Russia, he certainly can't find it. The people exist on a plain, monotonous diet—mostly bread, fish, sausage, sour milk cheese and some horrible-looking fruits and vegetables when they are in season. While we were in the country, we didn't see a single orange or peach. Very few people can afford to smoke. A piece of ice is obtainable only after vigorous insistence. Bicycles, which are a plague in other European countries, are absent from the streets of Russian towns, for nobody can afford one. Transportation for the average person is provided by bus, truck or government car, presumably, but most people seem to walk. Clothing is universally shoddy and poorly dyed. Our clothes contrasted so markedly with those of the other people on the streets that we were embarrassingly conspicuous and always attracted great attention. There are only a very few places of entertainment in the large cities, and after dinner one



The entrance of the Agricultural Exposition, in Moscow. In addition to agricultural equipment and products, the show contains samples of the newest and best in all other lines of human endeavor. Though the viewer is meant to think that they are typical of Russian life, most of the articles can be found nowhere else in the country.

has nothing to do other than walk in the park or stay at home, with no television but with a radio blaring propaganda or music, horrible to our ears.

The things we did not see were interesting by reason of their absence—no cigarette lighters, ash trays, pocket knives, golf balls, flashlights, flash bulbs, flash batteries, cosmetics or literally thousands of other little things we enjoy so much. I saw but one antiquated adding machine, and it was in a junk sale. There wasn't a single cash register in evidence, but the abacus was in use everywhere. Of a thousand such miscellaneous items that are commonplace in America, not one-tenth are in use or for sale on the Russian market. There are very few newspapers or magazines, and what there are contain absolutely no advertising! No wonder our exhibit in Moscow this summer—a display devoted entirely to consumer goods and the like—was so popular.

A family can't exist on the average husband's wages, and in consequence the Russian women have to work away from home, if able-bodied. I saw many of them laying bricks, working on the streets and doing other labor that elsewhere is con-

sidered proper for men only. While the women work, their babies, over six months of age and less than five years old, are cared for in so-called "kresches" operated by the government, where the mother is privileged to visit once a month. Charitably, one might say that the Russian people are living as Americans did in the latter part of the last century—not so well in many respects.

Yet the Russians are probably better off than they were 40 years ago, and there are many of them still living who know it. As for the younger people, they have undoubtedly experienced yearly improvements since the end of the civil war, in 1922, perhaps enough to satisfy them as long as they cannot find out how people elsewhere in the world are living. The teenagers, however, have no impressive memories of murders and exiles of relatives who dared challenge the authority of the government. They follow visitors about in herds and ask questions about America. It is apparent that they don't believe all the propaganda the government puts out, but are determined to get more knowledge of how other people live outside Russia.

Heretofore, the Russian people have been kept in line by terroristic methods, and their ignorance



A sandbox group at a creche, an institution to which children are sent at the age of six months. They are kept there until they reach five years of age, and their mothers are permitted to visit them no more often than once a month.

is still buttressed by means of propaganda, censorship, restrictions on imports of commodities and limitations on the admission of foreigners. One is aware of these facts before he leaves America, for though a passport is all that is required for admission to most other countries, he needs a visa or special permission to enter Russia. A visa is granted only at the last minute before one's departure, and after he has submitted several passport pictures, answered innumerable questions and presented certification that first class accommodations have been paid for in advance at the official rate of six rubles to the dollar, despite the fact that the over-the-counter rate is 10 or more. The traveler subsequently is assessed a fine if he fails to utilize all travel and other accommodations listed on his itinerary.

When one lands in the first Russian town, his visas and passport are taken away from him and are not returned until he leaves the country. His luggage is searched for magazines and other reading matter, and anything that the Russian people should not see is confiscated. Nothing else seems to interest the Russian customs officers.

Three representatives of Intourist, the official Russian travel bureau, met us at our first stop and accompanied our party during the entire month we were behind the Iron Curtain. I am certain they were responsible for making sure that we didn't violate our touring privileges by visiting restricted areas, but none of them told us where we couldn't go, and we traveled about the cities freely without any interference whatever. On the other hand, these three young people did us a great service as interpreters and saw to it that we had a good time in their country. They were very likable and accommodating young men and women, and weren't at all what I had anticipated they would be. Truly, in the past three years the Iron Curtain has lifted a bit, though I made no effort to find out how far.

RUSSIAN MEDICAL PRACTICE

Once we were inside Russia, things went according to a schedule that had been arranged for us by the World Medical Association, which sent two representatives along to make arrangements for us. They did a splendid job under difficult circumstances. Sometimes it seemed that we were going to miss making hospital visits because permission had not come through from Moscow, but in typical Russian fashion the permission always arrived at the last possible moment. Since the requests had been submitted as long ago as last winter, it might appear that considerable thought had been given to the granting of them, perhaps because the government wasn't yet ready to display Russian medicine to foreign doctors. In the end we always were allowed to proceed as planned, and we were received cordially by hospital officials

and staffs, but I don't want to give the impression that anyone can go where he pleases and visit any hospital without first obtaining this permit.

The language created many problems, for the lay interpreters who accompanied us were not familiar with medical terms. Sometimes we met a Russian doctor who spoke some English, and in the Ukraine, which the Germans occupied for three years during World War II, most of the doctors knew some German and could converse with us in that language. This helped, but a good physician who understood our language and Russian would have saved us much time and could have spared us many misunderstandings. Nevertheless, we did learn a great deal—chiefly by observation—about how medicine is currently practiced in Russia. We didn't learn everything, of course, but enough to talk about.

Over 60 per cent of Russian doctors, we were told, are women. It seemed that more than half of the physicians who occupied important posts in the hospitals were women—capable appearing, but by no means good looking. But I was never able to distinguish between nurses, midwives (who do all the normal deliveries) and women physicians, no matter how hard I tried. We saw only one woman surgeon.

The younger physicians of Russia are very well educated. After attaining the equivalent of our high school education, they are eligible to study medicine. Having completed eight years of medical study, they are sent out to district dispensaries for two years as general practitioners, or "therapists," as the Russians call them. There, the therapist works with a part-time pediatrician-obstetrician and a full-time nurse or nurses and a dentist. This team is responsible for the health of about 4,000 people, most of whom live no more than two kilometers from the dispensary. Home and night calls are made by the therapist. If necessary, he sends serious cases to the district hospital. Industries have their own health dispensaries. After two years in the district, the student returns to a hospital for further training in the specialty that has been assigned to him, and then he is sent to some medical facility where he remains for the rest of his life or for as long as the government chooses. However, he may advance to higher degrees if he is capable, ambitious and has the right connections.

At the end of specialty training, the physician is paid \$800 per year, and \$3,000 per year before incomes taxes is the best pay to which a physician can attain in Russia. It should be noted that engineers are the most honored career people there. Many of them receive from two to three times as much salary as do physicians with equivalent schooling and training.

Doctors are hired by the government and are responsible to the Ministry of Health, the repre-

sentative of which in each of the so-called republics, roughly the equivalents of our states, is an advisory committee composed of representatives of various allied sciences and of the people. This committee makes all of the final decisions for the physicians and hospitals, approves budgets, dictates management, etc., under the supervision of Moscow. Medical practice is regulated and controlled, then, from the Kremlin through subsidiary ministers and committees in each of the so-called republics and satellites.

HOSPITALS AND MEDICAL AND SURGICAL INSTRUMENTS AND SUPPLIES

Russian hospital buildings, like so many elsewhere on the European continent, are ancient structures not more than five stories high, made of stone or sometimes of stucco-covered stone or brick, and dirty or badly discolored by time and pigeons. The architectural designs lack symmetry and are ugly to our eyes. Where a hospital occupies more than one building, the structures are of every type imaginable, sometimes covering one or two city blocks. At one institution that we visited, the administration building had once been a church. The government had expropriated it along with adjacent buildings such as apartment houses, barracks, machine shops and other struc-

tures, and had converted the rooms into wards, offices and operating rooms.

Although everywhere we went there were frantic construction programs in progress, *we didn't see a single hospital being built*. In fact, we saw no hospital building that was less than 100 years old.

The insides of these buildings are no less aged and grim looking than are their outsides. The interior walls are of grey, dirty stone, sometimes plastered, and the floors, except where they are covered by a wood-block type of covering, are bare or asphalted. The ceilings are unbelievably high, and though the windows are all double for keeping out the cold, radiators are seldom to be seen.

The furniture in hospitals is worn and of ancient design, with no two pieces alike. It is liberally scattered in the halls and rooms. The beds are only about a foot and a half above the floor, and the standard thin felt-like mattress is laid over a sort of covered box, the contents of which I never managed to identify except that it feels like rope.

The arrangement of the rooms and wards is a hodge podge and not very efficient, for as I have said, the hospitals have in many instances been improvised from miscellaneous collections of old



This is a view of Skilovsky Surgical Hospital, in Moscow. We saw no hospital building that was less than 100 years old, and none under construction. The insides of these structures are no less grim than the exteriors. Note the open, unscreened windows. Generally, the Russians are very intent upon asepsis, but flies come and go at their hospitals.

buildings. But in spite of all this, everything is kept spotlessly clean. The walls and floors are being scrubbed continuously, and to brighten the drabness, there is a profusion of white curtains and linens decorating everything they can be hung upon. Usually there is only one elevator, which like all other elevators in Russia holds only three or four people, is slow, creaky and hesitant, and is out of order most of the time. Everyone climbs stairs in Russia, and since only a few of the modern structures contain more than five floors, the people of that country contend they have little need for elevators anyway.

The halls are winding and full of sharp turns and benches for patients, and there is a peculiar odor about them. Around and between the buildings there are strips or patches of lawn, and trees under which patients sit. The alleys or streets between the buildings are paved with cobblestones or asphalt with a stone base.

At the nurses' stations one sees some charts scattered about, some that look fairly modern, and a few old-fashioned hypodermic syringes. But there are no packaged drugs, and occasionally there are a few small bottles with crude labels on them which contain applications or medicaments.

In the medical wards the windows have no screens, and flies seem to be privileged characters. Large enclosures accommodate three or more operating tables which may be in use simultaneously. Since everything is owned and run by the government, there is a great trend toward standardization throughout the country, and hospitals together with their furnishings are no exceptions. Thus, when you have seen one hospital, you have seen them all.

The equipment and supplies that we saw were pathetic. Except in surgery, we didn't see a single piece of equipment that looked modern. In physiotherapy there were old, obsolete and broken down pieces of apparatus in use that we discarded 50 years ago, save for an old Fisher diathermy which the Russians may have received from us on Lend-Lease. Everywhere, including the spas (which are meccas for curing everything that may afflict political favorites), the Russians like to use hot baths prepared by passing carbon dioxide through the water in ancient tubs when spa water isn't available.

Anything is used that may keep patients content, no matter how ineffective, when adequate remedies aren't available. And remember, we undoubtedly were shown the best that Russia has to offer.

Just as I had done outside of the hospitals, I learned more about Russian health care from what I failed to see than from what I succeeded in finding. Here are some examples. In the hospitals, we never saw a typewriter or any other kind of office machine, a refrigerator, any pam-

phlets and magazines such as clutter up our offices at home, or any of a myriad of other things that we had been accustomed to. Telephones are scarce. Crank-up hospital beds such as we use are missing. Packaged drugs or pharmacies, if there are any, weren't shown to us. *On the entire trip, I never caught sight of an x-ray machine or an x-ray film.* We did see an occasional electrocardiograph, or machines that could be called such, and perhaps a metabolism apparatus or two. Most of the mechanical devices were in research laboratories, and those establishments, by the way, weren't particularly impressive either. I am sure that the Russians possess some modern medical equipment, but certainly they can't have quantities of up-to-date machines. On one occasion I called a woman superintendent's attention to the noticeable lack of the equipment and supplies that are commonplace in our hospitals. She replied in broken English, "Sometimes our appetite is too big, and the committee doesn't give us what we want."

These shortages of materials for the treatment and control of disease have led to many improvisations—designed, as I have said, to keep the patient content. Furthermore, through ignorance or necessity, Russian doctors have come to believe that such methods are superior to any other type of therapy. For example, one pompous-looking doctor who ran the hydrotherapy department of a hospital insisted that he can dissolve gallstones in his baths and cure pelvic conditions in women by packing their vaginas with hot, moist peat moss and then immersing them in tubs filled with the same material. Others made exaggerated claims about their successes with Faradic current, sparks and the like in the treatment of coronary heart disease, and claimed to have used leeches effectively.

But don't misunderstand me. Most Russian physicians to whom we talked—especially the younger ones—were well-educated men. They knew all of the answers to our questions. It seems that as Russian doctors grow older they forget what they once learned, after years of having nothing to work with, and sooner or later come honestly to believe that their makeshift remedies are the real treatments of choice.

They believe a great deal in psychotherapy, and rely upon it to relieve pain and alleviate disease. Most surgery is done under local anesthetics. In obstetrics, women are requested to press on the anterior superior spine of the ilium to relieve labor pains. As a result of this procedure and of not permitting husbands or relatives to visit them prior to their release eight days later, they claim to deliver about 70 per cent of mothers without any analgesia or anesthesia whatever. This, I understand, is in accordance with the teaching of Pavlov, whom they worship. All babies are swaddled up to about six months of age, for reasons

that weren't adequately explained to us. I am inclined to believe that their type of therapy either has evolved from a lack of equipment and supplies, or is a tradition.

We saw the best, and except for surgery the overall practice of medicine in Russia is very poor. Moreover, I don't see how a rapid improvement in the antiquated system that we found there can take place under the present circumstances. In the first place, no matter how much the young physicians learn, they have a long road to travel toward modernization, for they have nothing to work with and many old customs and prejudices to dispel from the minds of their older colleagues as well as of their patients. In the second place, opportunities for uncensored communication with or visits to physicians in the outside world aren't being provided to them. When we invited them to visit us in America, the Russian doctors replied, "Yes, when the shrimps or crayfish whistle!" which seems to be a popular Russian way of expressing polite derision.

Russian hospitals certainly need modernization, but other projects have been given higher priority.

It is extremely interesting to note how inquisitive the Russian physicians are about what we are

doing in America, but how little awareness they have of the medical progress that is taking place outside their own country. I fear that the best of the doctors there have become so indoctrinated with the belief that their system is best that they will never make much progress.

The systems and circumstances under which Russian physicians work make them answer an American's questions in ways quite different from those employed by doctors elsewhere in Europe. Perhaps theirs is a conceit born of ignorance, or perhaps a group inferiority complex makes them talk as they do. For example, they assert accomplishments without offering any proof that they have done what they claim. They quote statistics on any and every topic, but have no charts or other data to support their statements. Apparently everyone is expected to take a Russian at his word. On one occasion when we asked for the privilege of seeing some statistical data, an official admitted that the government had not given his institution enough help or funds to permit the keeping of statistics for several years past. Yet he had been spouting figures with abandon.

We thought it a little naive for our hosts, educated men, to keep repeating monotonously that



This picture, taken at the October Ninth Hospital in Kiev, shows our party with Professor Kolomirchenko, the director of the institution. (Editor's note: Dr. Sternagel is third from the left among the standees.)

medical care is absolutely free in the Soviet Union.

On many occasions we politely insisted on being shown equipment such as x-ray machines, pharmaceuticals and medical journals, but no one complied or indeed made any effort to explain why he couldn't. Except in the two instances already mentioned, they never admitted or made any excuse for what we believed were their apparent shortcomings.

We saw some excellent performances in surgery. The crocodile clamp, which the Russians claim to have invented, was used to anastomose the ends of hollow organs such as the stomach and intestines. A variation of the crocodile was also shown us, one that is used on the inaccessible pedicles of organs such as the lobe of a lung, and we saw still another variation of it that is used for anastomosing blood vessels with rapid and apparently satisfactory results. The device works much like a paper stapler but uses tantilum. I am told that it will shortly appear on the American market.

We saw the Russians collect cadaver blood and transfuse it into live patients. If they can be believed, they have been doing this routinely since it was first demonstrated by Professor Schamov in 1928, and there are fewer reactions from such blood than from that of live donors.

GLIMPSES OF THE SECRET POLICE

We enjoyed mingling socially with our doctor guests at parties which we gave them and their wives at our hotels. They usually outnumbered us two to one, always arrived on time and always seemed to enjoy themselves immensely in spite of the language barrier. In return, after hospital rounds and meetings, they invariably conducted us to one of the doctors' offices where a table had been set with vodka, brandy and miscellaneous edible tidbits, and we had a lively time talking and kidding with one another. Their behavior in social situations showed them to be physicians, even though most of them looked more like Russian peasants. They showed their willingness to be good friends when, on several occasions, many of them accompanied us to airports on the days of our departures.

Perhaps in some instances their courtesies to us were prompted by a desire for private conversations during which they might learn more about how we practice medicine. I am sure they didn't visit us without being shadowed. Sometimes a doctor came to spend an evening with us at our hotel, and I noticed on two occasions that when our guest was about to enter the elevator on the way to our rooms, a character appeared from a recess of the lobby to question him and to scan some sort of credentials that the physician possessed. At one of our parties in Prague, a big, stupid looking gorilla was pointed out to us as a red agent, and we caught sight of him on several subsequent occasions during our hospital visits. One evening he



Dr. Androssov, inventor of the "crocodile" clamp, using it during a stomach resection in Moscow.

appeared at an American embassy cocktail party to which we and our doctor friends had been invited. He was the only Russian present, and he was obviously there to spy, for as we learned later, the Russian government had forbidden our friends' accepting the invitation. He stayed all evening, and partook of the refreshments as if he had been formally invited. Obviously he was there to see how many of the Czech doctors disobeyed the government's orders by attending. None did.

CONCLUSION

I think that I saw enough in Russia to justify my reaching the conclusions that follow. It seemed that Russia had, indeed, made some progress in certain areas during the past 30 years, but it is hard to believe that the people are living any more comfortably than they and their forefathers did under the czars. Nowhere did we see any evidence that they are ahead of us Americans in anything other than showmanship.

One can't help seeing people who live and work under conditions that must be almost as bad as they were during the days of the czars. Yet, they behave as I imagine good communists should. They boast without embarrassment, even though they can show nothing in proof of their claims. Their reasoning, it seemed, is altogether different from ours, and much of their behavior struck us

as so unnatural that we were kept constantly wondering about them.

To be sure, our inability to understand one another was an important barrier—a greater one, incidentally, than in the countries of Western Europe.

There are several good reasons why the judgments of the Russians are warped and different from ours. First of all, terrorism must have had its effect. Next, we must remember that they have received no uncensored news from the outside world for more than 15 years. At the same time, communist ideology and success stories have been blared at them uninterruptedly, and they haven't been permitted to voice any disagreement or disapproval.

Communism, as we were able to observe it, does have some advantages over systems which permit people greater degrees of individual freedom. When the government owns and controls everything including the people themselves, it should be easy to mobilize resources, especially in time of war, and rapidly dispatch them where they are most needed. I can't imagine how a depression could develop in such a country, from any-

thing short of a famine or an invasion from the outside.

I can't venture a guess as to how patriotic the Russian people may be. They display pictures of their national heroes, wave flags and wear medals, but whether these actions mean anything—that is to say, whether they are voluntary or enforced—I had no means of determining. One thing I can be sure of is that a crisis requiring further restrictions on food and other consumer goods would reduce them to virtual starvation. But it is doubtful that they would complain, much less revolt, for they never have had more than the barest necessities.

I am inclined to believe that progress in Russia—including medical advances—will be very slow except in those fields about which the government is particularly concerned, and even in those areas there is almost certain to be a tremendous waste of manpower because of ignorance, lack of spirit, and (surprisingly enough) an absence of cooperative thinking. Glaring examples of how communism can stifle incentive, initiative and progress can be seen in the once-progressive areas of Czechoslovakia and East Berlin.



A Czechoslovakian medical professor and his assistant. In our conversation with the elder of these men, we learned that he took his M.D. at Johns Hopkins.



Scientific Articles

The Place of Radioisotopes in The Community Hospital

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FOR OVER 20 YEARS, cyclotron-produced radioisotopes of sodium and iodine have been used in medical practice. In recent years, the availability of atomic-reactor-produced isotopes of many elements has expanded the radioisotope field with explosive velocity. Some notion of the extent of this growth is provided by the fact that the Oak Ridge National Laboratory has shipped over 100,000 curies of radioactive isotopes,¹ having a total of 100 times the activity of all the radium in the world.² More than 10,000 articles about radioisotopes and their uses have been published in the past 10 years. At present some 1,500 medical groups in the United States hold licenses for the use of radioisotopes,³ and it has been estimated that at least 200,000 people have had the benefit of diagnostic isotope procedures, and some 20,000 the benefit of radioactive isotope therapy.⁴

MANY OF THE EARLY PROBLEMS HAVE BEEN SOLVED

Although some radioactive procedures can be performed adequately in office practice, extensive diagnostic and therapeutic technics generally require the organization of a special hospital service. Until recent years, such services were limited to large teaching hospitals in medical centers. Now, the increase in the numbers of isotope-trained physicians and technicians, as well as the standardization of radioactive pharmaceuticals and detecting equipment, and concomitant reductions in their cost, has opened the field to all interested practitioners of medicine.

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The uses of radioactive isotopes in either clinical medicine or in basic research is dependent upon the feasibility of substituting the radioactive element for its stable brother in the biological system under study. This may be accomplished by a variety of means ranging from the direct offering of the isotope in simple chemical form to the offering of chemically preformed compounds labelled with a radioactive isotope. An example of the first is offering I^{131} in place of stable I^{127} to the thyroid gland. An example of the preformed labelled procedure is administering vitamin B_{12} tagged with Co^{60} to diagnose pernicious anemia.

Before undertaking any procedure involving uses of radioactive materials, one must minimize or eliminate any hazard from the radiations involved, as well as any chemical toxicity of the material. At present, the Atomic Energy Commission oversees the first of these, and the staff that enforces the federal Pure Food and Drug Act insists upon the second of these prerequisites. The requirements that applicants must satisfy before the AEC will license them to use radioactive isotopes can be secured from many sources.⁵ Basically, the Commission requires a familiarity with the procedures—one that can be secured from practical training of moderate duration. The purity of the products is controlled through supervision of the suppliers.

When considering the radiation hazard, one must keep in mind that in general the commonly performed diagnostic procedures using radioisotopes give no more exposure than a patient receives in having a chest x-ray. Many involve considerably less exposure, and some give no radiation at all to

the patient. When performing any diagnostic procedure, one must always balance the possible hazard against the benefit that is to be gained from the information thus obtained. Well-trained radioisotope laboratory technicians receive considerably less than the maximum permissible exposure,⁶ and many receive too little to be detected by present survey methods. Standard diagnostic procedures are therefore safe for both patients and laboratory personnel.

THERE ARE THREE SORTS OF DIAGNOSTIC PROCEDURES

Diagnostic procedures using radioisotopes can be divided into three main groups, depending upon the basic approach to the problem. The first of these is metabolic localization of the isotope. Here, active or passive concentrations of the isotope in certain tissues provide the basis of the study. Examples of this method include thyroid studies with radioiodine, whether it be uptake in the gland, excretion in the urine, or conversion to radioactive hormone. Likewise, tumor localization with radioactive phosphorus, arsenic, copper, potassium or tagged serum albumin, is dependent upon specific concentration.

The second group is based on the dilution of the administered isotope throughout a specific space or pool. Here, the studies include blood-volume determination by means of tagged serum albumin or tagged red blood cells; total body-water studies using tritium H³; and sodium, potassium and chloride space determinations using radioactive counterparts of these atoms.

The third group of studies is based on the biologic use of the material administered. This group includes: (1) Study of pernicious anemia with radioactive vitamin B₁₂. (2) Study of anemias with Cr⁵¹-tagged red blood cells or with radioactive iron. (3) Study of liver function with radioactive rose bengal. (4) Study of pancreatic function using fats labelled with radioiodine. (5) Innumerable studies of basic metabolism using C¹⁴ in basic organic molecules such as amino acids, acetone, cholesterol, hormones or any other compound containing carbon.

At present, basic studies of metabolism are producing information so rapidly that many changes in the teaching of biochemistry and physiology must be made for each new class of students. It would be impossible to overemphasize the importance of this type of investigation to our ultimate understanding of body functions.

HERE ARE SOME SPECIFIC TESTS

Although it is obvious that radioactive isotopes have been, are and will be a great research tool for the study of metabolism in its broadest sense, and in this way for increasing our knowledge of health and disease, they also are a means of securing clinical information often unobtainable by other methods. For example, in pernicious anemia

the diagnosis or its exclusion can be made accurately, regardless of the medication the patient is taking, through the use of Cobalt⁶⁰-tagged vitamin B₁₂.⁷ This test depends upon the detection of the Co⁶⁰ in the urine after oral administration of the Co⁶⁰ B₁₂. In the absence of an intrinsic factor, less than 2 per cent will be found in the urine, but with natural or simultaneously-administered intrinsic factor, the vitamin will be absorbed from the gastrointestinal tract, and at least 10 per cent will be excreted in the urine.

The test is performed by administering a capsule of Co⁶⁰ B₁₂ orally, and following it several hours later with 1,000 micrograms of non-radioactive B₁₂ parenterally. The body is thus overloaded with B₁₂, and any that is absorbed from the intestine will not be needed and will be excreted in the urine. A 24-hour urine collection is then assayed for Co⁶⁰, and the amount found is expressed as a percentage of the amount administered. If the patient has poor absorption and consequently poor excretion in the urine, one can assume some defect in the absorption in the intestinal tract. To pinpoint this defect, one restudies the patient in exactly the same manner, with added intrinsic factor. The addition of this factor produces normal absorption and excretion in pernicious anemia. In sprue, the absorption is low with or without added intrinsic factor. The test can give accurate results, regardless of the medication the patient may be taking. Since many patients receive various vitamin preparations, this is an extremely important advantage. Likewise, in patients already suspected of having pernicious anemia, one need not stop medication while the diagnosis is being confirmed.

The study of red-cell destruction and production can be done with the patient's own cells, thus eliminating many of the problems of anemia studies.⁸ The patient's own cells are incubated for a few moments with Cr⁵¹, and the chromium fixes tightly and remains fixed to them. The cells are then washed and reinjected into the patient. After complete mixing has occurred, periodic samples are drawn. These give information on which to determine, first, the total red blood cell mass, and second—with the hematocrit—the blood volume. Samples drawn subsequently show the rate of destruction of the cells. The sites of destruction can be localized by their increasing concentrations of the Cr⁵¹. The value of these studies in assessing the causes and following the progression or response to treatment of various anemias is immediately evident. The process can also be studied from the production rather than the destruction side by administering radioactive iron (Fe⁵⁹), and studying the rate of incorporation of iron into the red blood cells.⁹ All three of these procedures—Co⁶⁰ B₁₂ absorption, Cr⁵¹ tagging of red blood cells, and Fe⁵⁹ uptake—give clinical information which is impossible to obtain by other routine methods.

In addition to these, there are many other radioactive isotope studies that give information faster, more easily, more accurately and at less expense than do other routine methods. These include thyroid studies with radioiodine.¹⁰ Here, a very high degree of accuracy—equal to or better than other clinical assessments of thyroid function—can be readily obtained. In addition, one may secure a scan or map of the thyroid gland which shows the location of functioning and non-functioning parts.¹¹ This method of study contributes greatly to the evaluation of masses in the upper mediastinum, as well as nodules within the gland. In this technic, a very finely columnated detection device is employed which “sees” only a few square millimeters of area. This detector is mechanically driven over the site suspected of containing radioactivity, and the recording system is connected to the detector in such a way as to provide a point-to-point reference. The ratio of intensity of activity from one area to another can therefore be recorded. Commercially, there are several different types of recording devices, ranging from mechanical clickers which mark carbon paper to photographic recording instruments.

The use of tagged serum albumin or tagged red blood cells in the determination of blood volume gives accuracy comparable with that of the dye-dilution method and with considerably less difficulty.¹² One has only to inject a known amount of activity into any vessel, and after a suitable mixing period (10-20 minutes), to withdraw a sample of blood and relate its activity to the amount originally injected:

$$BV = \frac{\text{total activity injected}}{\text{activity per ml. of diluted sample}}$$

The study of the function of pancreatic enzymes can be performed by administering tagged fats orally, and then checking the activity of either the stool or the blood, which will be reciprocally related, to determine the per cent of absorption. The stool determination is probably the more accurate, but either is easier and better than other methods of checking gross or microscopic fecal fat.

The procedure is performed through the oral administration of a known amount of activity tagged to fat. In a normal individual, less than 2 per cent will subsequently be found in a 48-hour stool collection. The level of activity in the blood will rise gradually over a six-hour period, and normally will reach 12 per cent of the administered dose.¹³ The same procedure can be performed using labelled fatty acid to differentiate between poor breakdown of fat by pancreatic enzymes and poor absorption of fatty acid by intestines. This general principle of observing changes in tagged nutritional elements will have increasingly greater importance in assessing nutrition problems generally.

The study of liver function by means of I^{131} -tagged rose bengal has recently been receiving

wide clinical application. Rose bengal is excreted by the liver much like bromsulphalein, and I^{131} can be used to make it radioactive. One can study the radioactive levels and determine: (1) the rate of clearance from the blood; (2) the rate of uptake in the liver; (3) the appearance time in the intestine; and (4) the location of functioning liver as distinguished from non-functioning tumor masses by scanning technics. These studies have been of great value in differentiating hepatocellular from obstructive jaundice, the appearance time in the intestinal tract being the critical part of this determination.

RADIOISOTOPE STUDIES IN VITRO

Though all of the types of studies so far enumerated require some radiation exposure to the patient, the order of its magnitude is very low. As I have said, it is about the same as that which he receives during a chest x-ray, and it is considerably less than he gets during the taking of an intravenous urogram. Many new procedures are on the horizon, ones that can be done *in vitro*, and therefore give no radiation exposure to the patient at all. One of these is a test for thyroid function which depends on the degree to which the thyroid-binding protein is saturated with thyroid hormone.¹⁵ We have performed this study on 1,000 patients, and find its reliability to be equal to that of the 24-hour I^{131} uptake.

There are other tests which are still in the investigative stage, and which will illuminate many metabolic functions from a clinical standpoint. It is hoped that these will be in clinical use within a few years. With many of these tests already on a firm, reproducible basis and many others being rapidly developed, it behooves all clinicians to investigate the accessibility of these services.

YOU CAN AFFORD A SMALL ISOTOPE LABORATORY

From the economic viewpoint, the establishment of adequate clinical facilities is quite feasible. The basic investment in equipment for a small but efficient laboratory should range between \$4,000 and \$6,000, viz:

ESSENTIAL PIECES OF ISOTOPE LABORATORY EQUIPMENT AND THEIR COSTS

	<i>Minimum</i>	<i>Maximum</i>
1. 2" Crystal Detector	\$1,000	\$1,500
2. Pulse Height Analyzer	1,500	2,000
3. Scaler	1,000	1,500
4. Survey Equipment	250	500
5. Miscellaneous Laboratory Equipment	250	500
	<hr/>	<hr/>
	\$4,000	\$6,000

The choice of equipment is wide, and there are many excellent suppliers. One should consider the accessibility of service; indeed this factor should

be given as much weight as any other when one makes his selection of equipment. Breakdowns in any electronic devices are unpredictable, and unless they can be repaired quickly, they are costly not only in money but in patient care.

As far as physical space for the laboratory is concerned, one or preferably two moderate-sized rooms are necessary for doing the work and storing the isotopes.¹⁶ To keep procedures accurate, good housekeeping is mandatory, for minute contamination of equipment can produce grave errors in results. For this reason, some isolation from the general clinical laboratory is desirable.

The isotopes are now supplied by several pharmaceutical houses in precalibrated solid, individual doses, and thus the messy, hazardous manipulation of radioactive liquids has been eliminated. It is ready access to good, accurate supply that has played the greatest role in making many procedures applicable at the community-hospital and private-office level. Though the cost per test is slightly higher when the isotopes are purchased in individual solid amounts, the additional expense is minimal as compared with the cost of the equipment and personnel necessary to the handling of bulk liquid amounts of radioactive isotopes.

By way of bringing the support of an isotope program down to direct cost accounting, one can say that the performance of an average of three studies per day would support one full-time isotope technician and amortize all of the equipment over a two-year period. The performance of 10 studies per day would support two full-time technicians and amortize the equipment in less than six months.^{4, 17}

THE THERAPEUTIC APPLICATIONS OF ISOTOPES ARE GROWING

In addition to these diagnostic procedures, radioactive isotopes are playing a greater and greater role in the treatment of many patients. Although somewhat more training is necessary if one is to use isotopes therapeutically, it is becoming easier to secure it.

The treatment of choice for Graves' disease in patients over 40 years of age is unquestionably radioactive iodine. In many of the toxic-nodular patients who have some complicating factor that contraindicates surgery, radioiodine is very satisfactory. Similarly, in the treatment of intractable angina pectoris or severe cardiac decompensation, suppression of metabolic activity often has profound beneficial effects. The use of radioactive phosphorus and radioactive gold in the palliation of many malignant conditions is well known. Much of this work was pioneered at the State University of Iowa. The use of Co⁶⁰ as an inexpensive but effective replacement for radium is also extending the effectiveness of the community-hospital treatment of some malignancies. The physician doing diagnostic radioactive-isotope work will thus find

increasing demand for the therapeutic applications of his materials.

CONCLUSION

To attempt to cover the diagnostic or therapeutic uses of radioisotopes in detail is not the purpose of this communication. Rather, an attempt has been made to outline the types of procedures that can be performed, and to assess their value to the practitioner of medicine. I can only conclude that the use of radioactive isotopes as a clinical tool by an average community hospital is not only practical but necessary in bringing the best of medicine to the greatest number of patients.

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FILM ON DIABETES MANAGEMENT

A new color film on the diagnosis and control of diabetes has recently been completed and is being circulated for showing to professional audiences by The Upjohn Company, Kalamazoo, Michigan. It summarizes the latest information on therapy and management, with emphasis on the milder forms of the disease.

Appearing in "Current Trends in the Clinical Management of Diabetes" are Dr. Peter H. Forsham, of the University of California, Dr. Paul Dudley White, of Massachusetts General Hospital, and Dr. Henry Dolger, chief of the diabetes clinic at Mt. Sinai Hospital, New York City.

A Panel Discussion of Radioisotope Therapy

THOMAS A. BURCHAM, JR., M.D., DES MOINES, RALPH M. KNISELEY, M.D., OAK RIDGE

RICHARD E. PETERSON, M.D., IOWA CITY, FRANK R. HENDRICKSON, M.D.

CHICAGO, AND DAVID A. CULP, M.D., IOWA CITY

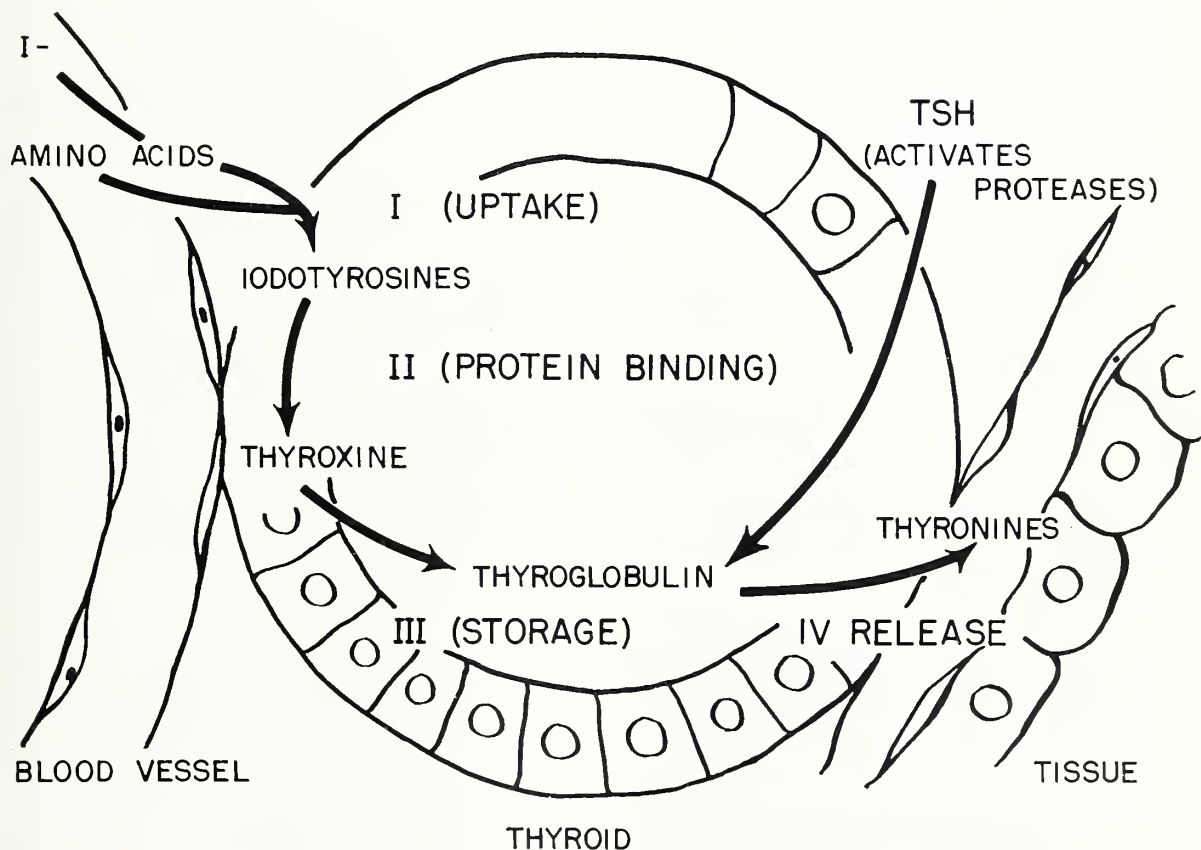
Dr. Thomas A. Burcham: We are going to start by talking about the uses of radioactive iodine in the diagnosis and treatment of various diseases of the thyroid. Dr. Kniseley is going to tell you some of the various methods of assessing thyroid function that are available today.

*Dr. Ralph M. Kniseley:** At the outset, I should

like to show you a diagram that will allow us to review in a very brief time the essentials of thyroid function and thyroid metabolism (Figure 1). On the left, we have a little capillary which is

* Dr. Kniseley is chief of clinical training and research at the Oak Ridge Institute of Nuclear Studies and a member of the Council on Radioisotopes of the American Society of Clinical Pathologists.

SCHEME OF THYROID FUNCTION



ADAPTED FROM BIERWALTES, RAWSON, AND OTHERS

Figure 1. From the Medical Division, Oak Ridge Institute of Nuclear Studies, Inc., under contract with the United States Atomic Energy Commission.

passing by the thyroid follicle, the essential unit of the thyroid gland, and from this capillary are taken amino acids, particularly tyrosine, and also iodine. These are taken into the thyroid follicle in the first phase of uptake. The tyrosine is then iodinated. The next phase is one of protein binding of diiodotyrosine and also the formation of thyroxine. At the stage of uptake and iodination, if there are thiocyanates present, we will have blockage of uptake. At the stage of protein binding, if thiorurea derivatives are present, there will be a blockage of the pyroxidase enzyme system, and again there will be inhibition of uptake of iodine and impaired thyroid function. Thyroxine (tetraiodothyronine) is then stored in the gland as a globulin—thyroglobulin, or as we know it histologically, colloid. And through thyroid stimulation by the pituitary, thyroid-stimulating hormones activate certain proteolytic enzymes to break down the stored hormone into thyroxine and perhaps other iodothyronines. It is released into the blood stream, where it immediately hooks onto an alpha globulin (thyroid-binding protein) and is transported to the tissue. At the tissue level, the thyroxine and the other thyronines act, in effect, as an enzyme catalyst.

Any tests of thyroid function have to be based on the assay of one or a number of these events that have affected the iodine from the time it left the blood stream, or the effects of the hormone on the tissues.

Now these are the function tests that ought to be available for the study of any patient who has a thyroid-function problem.

The next illustration (Figure 2) is a simple diagram to show you the diiodotyrosine. Two of these

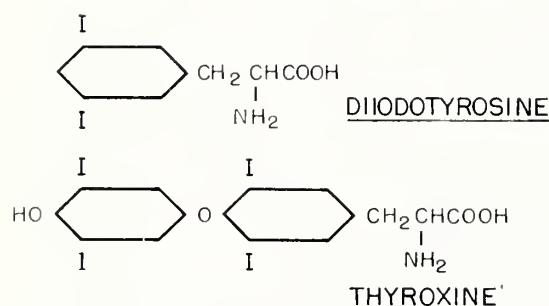


Figure 2. Two molecules of diiodotyrosine linked together constitute tetraiodothyronine, or thyroxine, the active thyroid hormone. Diagram from the Medical Division, Oak Ridge Institute of Nuclear Studies, Inc., under contract with the United States Atomic Energy Commission.

linked together are tetraiodothyronine or thyroxine, the active thyroid hormone. Table 1 classifies the common function tests: first, the basal metabolic rate; second, the chemical determination of circulating thyroxine as it is bound to the thyroid-binding proteins; third is the I^{131} uptake. In the last of those, the simple six- and 24-hour

TABLE I
BASIC TESTS OF THYROID FUNCTION

- | | |
|------|---|
| I. | BASAL METABOLIC RATE |
| II. | PROTEIN BOUND IODINE
(OR BUTANOL EXTRACTIBLE IODINE) |
| III. | I^{131} UPTAKE |
| | A. 6 HR.-24 HR. CURVE |
| | B. LIOTHYRONINE SUPPRESSION |
| | C. TSH STIMULATION |

measurements of the thyroid gland are made externally after a small tracer dose, or in certain circumstances a suppression is done first with an active thyroid hormone triiodothyronine or liothyronine. Another variation of the test involves stimulation of the gland under certain, again unusual, circumstances with thyroid-stimulating hormone.

MEASUREMENT OF I^{131} UPTAKE

Dr. Burcham: Why don't we now direct our attention to the iodine-uptake study itself? Time precludes a longer discussion of the various uses and mechanisms.

I should like Dr. Peterson to describe some of the features of I^{131} uptake.

*Dr. Richard E. Peterson:** The radioiodine used for the uptake may be given intravenously, but that method is really non-essential and perhaps represents unnecessary labor in other than very exceptional circumstances.¹ It is most conveniently given in a capsule or in a drink. It is very rapidly absorbed from the gastrointestinal tract. The doses that are usually given range from 10 to 100 microcuries. If one is interested solely in the concentration percentage of radioiodine within the thyroid, a 10 microcurie dose is quite satisfactory for most detecting systems available. If one is interested in a more refined assay of thyroid function, the procedure will probably include a measurement of blood radioiodine, and then a dose of 100 microcuries is essential. Further thyroid studies might include scanning or mapping the thyroid gland, either to detect whether there is a toxic nodule or whether a nodule is devoid of iodine-concentrating function. Then, a dose as high as 500 microcuries might be necessary.

These measurements of the amount of iodine in the gland are done at various time intervals. Dr. Kniseley mentioned six and 24 hours. There are physicians who use one, four, six, eight, 24, 48 and 72 hour intervals. Actually, one can readily sort out most hyperthyroid patients after one hour, but in questionable cases most physicians use the time interval of 24 hours after a tracer dose to decide the thyroid function level.

In addition to measurement over the thyroid,

* Dr. Peterson is chief of the Radioisotope Service at the Iowa City Veterans Administration Hospital, and Clinical Assistant Professor of Medicine at S.U.I. College of Medicine.

I mentioned blood studies. These latter permit thyroid I^{131} clearance measurements,² but they are used principally for ascertaining conversion ratios. Blood is taken, the serum is precipitated with trichloroacetic acid, and part of the unprecipitated blood is taken and counted. Then, the amount of the radioiodine which is precipitated by trichloroacetic acid is also counted, and this is expressed as the proportion of serum radioiodine that is protein-bound.³ In a variation of this procedure, the separation is achieved by passing it through an ion-exchange column which also gives an expression of protein-bound radioiodine,⁴ or where the same specimen is hydrolized and extracted with normal butyl alcohol, one gets butyl-extractable radioiodine.⁵ All of these results are comparable, and aid in distinguishing hyperthyroidism from the high uptake of iodine deficiency. They also help in differentiations between borderline cases of myxedema and euthyroid function. Another blood test has been proposed—one that involves incubating the patient's erythrocytes with I^{131} thyroxine or I^{131} triiodothyronine.⁶ However, disorders other than those of thyroid origin affect the results markedly in the test's present form.

EFFICIENCIES OF VARIOUS THYROID-FUNCTION TESTS

Dr. Burcham: Now we have reviewed the basic tests for thyroid function—BMR, PBI and serum cholesterol. Then in some detail we have gone into some of the radioiodine procedures. But when you have a patient who is suspected of having hyperfunction of the thyroid, which of these tests do you consider the most reliable, and which are the most readily available?

Dr. Peterson: I think all of the tests mentioned are subject to artifacts of either associated medication or laboratory error. I think the one that will decide the matter most readily is the radioiodine test.⁷ I am not sure that it is the most readily available, and it is frequently necessary to use information provided by other tests to decide the issue.

Dr. Burcham: When you speak of the "radioiodine test," I assume you mean the radioiodine uptake.

Dr. Peterson: I think that the 24-hour thyroid uptake would be the best test.

Dr. Burcham: Dr. Kniseley, are you in agreement, or would you differ with Dr. Peterson?

Dr. Kniseley: For myself, with my set-up, I think it is desirable to have two readings. Thus, I have a check against errors, and the early reading and the 24-hour one provide, in effect, a curve. The slope of the curve is also of value in addition to the single readings. It helps us in sorting out the borderline cases.

I might add that when we do have a case where the answer is equivocal as far as hyperfunction is concerned—if the six-hour reading is somewhere between 25 and 30 per cent, and the 24-hour read-

ing is in the 40-50 per cent range—then the patient is given a dose of 75 micrograms of triiodothyronine daily for a week. The test is then repeated, and the suppression of function will be quite apparent in an individual who is under pituitary control, or in other words is euthyroid but borderline in his uptake. On the other hand, if the individual is a mild hyperthyroid, he will not respond to this effort at suppression.

Dr. Burcham: Before we get to talking about pituitary influence, let's stay with the simple iodine-uptake tests for a few more moments. What do you recommend in cases where the results of the iodine uptake study aren't entirely satisfactory, and the BMR or PBI is available, or where some other determination can be employed?

Dr. Kniseley: The PBI is a good test. Clinically, it has the same correlation as the I^{131} uptake. Some people say it has a higher one. But it is a difficult test. It can be done well, but it is subject to error from contamination, and it needs to be carefully controlled. I think it is hard to do in the average laboratory, if one is to do it well. It has to be done by someone who knows the pitfalls.

The BMR is a good way to assay the metabolic state of the individual. One handicap is that the instruments that are available to most of you in the audience and to us who are here on the platform aren't quite good enough. The closed system which is used in most places over the country is subject to error in much higher degree than are the open systems. The latter, available in only a few of the larger centers, requires trained gas analysts for making the assays. Keating gave us a very nice editorial on the subject in the *JOURNAL OF CLINICAL ENDOCRINOLOGY* a year or so ago.⁸ He said that it isn't that the BMR is a bad way of getting at thyroid function, but that we need to develop a better and simpler way of getting accurate results. I'd stick with the BMR if we had more reliable measuring methods.

SOURCES OF MISINTERPRETATION

Dr. Burcham: Going on to the uptake studies, let's get the radiologists into the picture. Dr. Hendrickson, would you tell us some of the sources of misinterpretation that can be met with as one does iodine-uptake studies?

*Dr. Frank R. Hendrickson:** Dr. Peterson has already suggested that several things can influence our end result. Of course it is ideal to have a fresh patient who is taking no drugs and has had no other influences affecting the thyroid gland, but often this is not the case that is presented. In general, we can have an abnormally low uptake for various reasons. The principal one of these is that the patient has received a large amount of stable iodine (I^{127}) sometime in the recent past.

* Dr. Hendrickson is a member of the staff in radiation therapy at Presbyterian-St. Luke's Hospital, Chicago, and a clinical assistant in the Department of Radiology at the University of Illinois College of Medicine.

Of course Lugol's solution or any of the iodides that are frequently present in cough mixtures pose this problem. Ordinarily, if a patient refrains from taking any iodides for approximately a week, his thyroid gland will function about normally.

There are other iodine-containing compounds, however, that exert their influence over a much longer period of time. Most of these are the x-ray contrast materials. The water-soluble contrast materials are the ones most frequently used for intravenous urography. Some of those used for bronchography are water-soluble, too. These, staying in the body for slightly longer periods of time, release iodine more slowly and probably exert a depression on thyroid uptake of I^{131} for about one month.

There are some even worse offenders than these, however. They include the contrast materials used for gallbladder studies. There are many of them in use in various radiology departments. Almost all of them will exert a depression on thyroid function lasting up to six months. Thus, if one has a patient admitted to the hospital for gallbladder study and thyroid study, it is best to get the thyroid study done first. An even worse offender is the oil contrast material that has been used extensively for bronchography, particularly in the recent past, and also for myelography. It stays in the body for long periods of time, releasing moderate amounts of iodine for many years. Depressions of thyroid uptake from this cause have been reported as lasting up to 10 years.

Thyroid therapy itself can exert a depression upon thyroid function. Any of the anti-thyroid drugs of course has this effect. Almost all of them exert a depressive effect that is gone within a week or perhaps 10 days. If one wants to be ultra-conservative, perhaps he should say two weeks. Thyroid hormone itself, by its depression of the pituitary, exerts an effect that decreases I^{131} uptake, and this effect can be present for from three to four weeks. There is a long list of other drugs which have some depressant effect on the thyroid. Most of these are hormones or steroids of one kind or another. Prominent in this list are cortisone, all of the steroids, ACTH, PAS and a great many others. Most of their effects are of relatively short duration. If the patient is removed from these drugs for a week, the thyroid-uptake findings should be accurate thereafter.

Other things which will influence thyroid uptake are merely parts of thyroid disease. These include thyroiditis. Of course, a patient who has acute thyroiditis has an inflammation of the gland which depresses thyroid uptake markedly—down to zero or one per cent. Clinically, of course, the patient is euthyroid, for he hasn't had time to use up his circulating thyroid hormone. The case of chronic thyroiditis—the hyperthyroid patient—is an obvious type of problem. You get a low uptake, and anticipate a low uptake.

There is one other category—the patient whose pituitary doesn't work properly and who therefore is not putting out the thyroid-stimulating hormone that Dr. Kniseley has been talking about. Here we get a very low uptake, but if we give the patient exogenous TSH, the uptake will quickly become normal. This helps to distinguish hypopituitarism from hypothyroidism.

There are a few instances in which one will get an abnormally high uptake for reasons that are not really related to thyroid function. I think the most obvious one here is the iodine-deficient patient who is so hungry for iodine that he will take up abnormally high amounts even though the thyroid gland is not hyperfunctioning. With the increased use of iodized salt, this is becoming a more and more infrequent phenomenon, but I was informed a few minutes ago that iodized salt is a penny a pound more expensive than regular salt, and it may be that many people aren't using it for that reason.

Certainly many other diseases such as renal circulatory failure produce a failure of iodine excretion. Only about half of the iodine is normally metabolized by the thyroid gland, the other half being excreted in the urine. Then, if for some reason (circulatory collapse or renal failure) this is not excreted, the thyroid gland takes up a larger proportion than might have been anticipated.

Dr. Peterson: I might add another cause of increased uptake. A good number of cirrhotics will have high iodine uptake without having hyperthyroidism, though the reasons aren't yet understood.⁹

Dr. Burcham: Very briefly, I'd like to tell you about a patient. The panel may not have time to discuss this individual, but the case was one in which the differential in uptake was of value in determining the diagnosis. A 14-year-old girl had been sent to Raymond Blank Memorial Hospital, Des Moines. She had had a lump in her neck about a year previously, and the lump had disappeared spontaneously in about 10 days. Approximately three or four weeks before she was seen at the hospital, her neck had begun to enlarge again. She had some symptoms of hyperthyroidism, but they weren't definite and the diagnosis was in doubt. Her gland was somewhat tender, and the question to be decided was whether she had true hyperthyroidism with a diffuse enlargement of the gland, or whether she had thyroiditis. She was treated with Metacorten, but didn't improve. She was treated with Lugol's solution, and her thyroid got bigger and her symptoms didn't regress. It was at this point that we first saw the patient. Some of her symptoms indicated hyperthyroidism, and some did not. She had no tachycardia, and no eye signs or tremor. A BMR was done, and it was -1 per cent. Her cholesterol was 246. The top normal in our laboratory was ap-

proximately 230. Again, there was still doubt as to what this girl had. We did an iodine uptake, and her six-hour uptake was 67 per cent.

Dr. Peterson: The question posed clinically was whether the patient was hyperthyroid or whether she was suffering from some sort of thyroiditis. The iodine-uptake finding of 67 per cent in six hours, to me, would rule out any question of thyroiditis.

Dr. Burcham: That is how we interpreted the results of these various tests. This young girl was subjected to subtotal thyroidectomy, and the pathologic studies conducted by Dr. John Green confirmed that the gland was hyperplastic. The point that this illustrates, I think, is obvious.

GRAVES' DISEASE

Now, let's talk about the treatment of various thyroid diseases through the use of radioiodine. Dr. Hendrickson, will you tell us briefly the rationale behind the treatment of Graves' disease? When we use the term *Graves' disease* this afternoon, we shall be talking about diffuse toxic goitre, as distinct from nodular toxic goitre.

Dr. Hendrickson: I think we could probably spend the whole afternoon discussing the pros and cons of radioiodine vs. medical vs. surgical treatment of hyperthyroidism, but perhaps we can cover the subject rather sketchily in a short space of time.

I think we might talk about the medical treatment of Graves' disease first. In my opinion, medical treatment is generally to be reserved for the young patient and for the patient who presents a very pressing need for rapid control. Certainly there is no quicker way to control a toxic patient than to put him on Lugol's solution, and many patients have a sufficiently active metabolic rate so that rapid control is important. I think that following control of the patient by medical means, one then has two choices when he is dealing with young people, and probably three choices when he is dealing with older ones. A young patient can be kept on medical management, but many patients are reluctant to take pills over a long period of time, and the necessity for keeping close tab on the leukocytes makes management a little difficult. Thus, there is often a reason for considering the removal of a part of the patient's thyroid gland. This brings us to the surgical treatment, and I think subtotal thyroidectomy in the young patient whose hyperthyroidism has been brought under control medically is the treatment of choice. I am sure that there are many men here who could discuss this matter at great length.

As this is a radioisotope discussion, we might spend a little more time on the treatment of hyperthyroidism by radiation. In the older patient who has Graves' disease—the patient beyond 40 years of age—I¹³¹ therapy is the treatment of choice.

It brings the patient under control about as quickly as the propylthiouracil group of drugs, it doesn't require the constant taking of medication, the control is often permanent, and it is certain to last for many years.

One may ask why we choose this arbitrary age of 40 years. This is a matter of philosophy. We have been treating patients with radioiodine for no more than 20 years, and in large numbers for really no more than 10 years, and until we have been able to discover the deleterious late effects, or to make sure that there are none, most of us would prefer not to treat the younger patients with radioiodine. However, for younger patients who have some contraindications for surgery, I think I¹³¹ is a very good means for establishing control.

NODULAR GOITRE

Dr. Burcham: Now, I'd like us to talk a bit about the treatment of nodular goitres. Dr. Kniseley, will you give us some of your views on that problem?

Dr. Kniseley: I'm not a therapist, but in patients who are toxic because of hyperfunctioning of thyroid tissue, with nodules ("hot" nodules, if you will), control can be achieved by means of internal radiation with radioiodine. I don't wish to say that this is the treatment of choice, for with nodules we have the further responsibility of sometime ascertaining to our own satisfaction that no carcinoma is present in the nodular goitre. It is, I think, a very well-established fact that solitary toxic nodules—hyperfunctioning nodules that produce toxic symptoms or that merely take up iodine in excessive amounts—are not carcinomas, and if we are satisfied that we have a solitary nodule, the chances of the patient's having a carcinoma are indeed remote. It is a medical rarity for a hyperfunctioning nodule to be malignant. Such things have been observed, I think, but for practical purposes they are non-existent. Because the response of multiple-nodular goitre to radioiodine treatment is less easily predicted, and because the dosage cannot easily be established in a relatively young person with multiple nodules and toxicity, I would think surgery the treatment of choice. In an older patient with some cardiac decompensation or with some other condition that makes him less than normally able to withstand the trauma of surgery, radioiodine would be an acceptable way of establishing control.

Dr. Peterson: I think I agree, for the most part, with Dr. Kniseley, but I might just paraphrase a part of what he has said. Some therapeutic groups have routinely treated toxic nodular glands with I¹³¹, not with the idea of avoiding subsequent surgical treatment, but in preparation for it. The Cleveland Clinic has followed the procedure of first treating patients with radioiodine and then following them to see whether the nodules dis-

appeared. At least some of the patients in whom the nodules disappeared did not have surgery. But I would agree for the most part with Dr. Kniseley.

Dr. Burcham: We have established that radioiodine is excellent medicine for the patient 40 or more years of age who has diffuse toxic goitre. It is a less desirable form of treatment in a person with a nodular goitre.

Now, Dr. Hendrickson, may we return to you, sir, to learn how you calculate the amount of radioiodine to give a person in an attempt to control a diffuse toxic goitre?

Dr. Hendrickson: This is one of the more difficult parts of treatment with radioiodine. An old professor of mine used to say that he took the last digit on his speedometer when he arrived at work, and gave his patient that many millicuries. I think we can now do a little better than that. We have to take into consideration the size of the functioning gland, and I emphasize the word *functioning* here, for one can have a very large gland but much of it can be cystic, and obviously it is only the functioning part—the part that is taking up and metabolizing iodine—that is involved in this calculation. A gland weighing 40 Gm., for instance, that is all functioning would take up twice as much iodine as would a gland weighing 20 Gm. if it were all functioning.

In addition to the size of the functioning gland, we need to know how much of what we give ends up in this gland. This is the percentage of uptake. So this enters into our calculation. But in addition to this we have two other considerations—or one other consideration with two subdivisions—the half life of the radioiodine. In other words, we need to know how long this iodine will be operative in the gland before it is converted into a hormone and put out into the general circulation. The biologic half life is something that is hard to determine. It can be ascertained experimentally for each patient, if one wishes, but ordinarily it is in the neighborhood of one month, and the effective half life—that is, the sum of the physical and the biologic half lives—is somewhere between five and seven days.

We add all these things together, and we come up with a dosage that we think will bring the patient under control. This usually ranges in the neighborhood of six or seven millicuries of radioactive iodine given orally. If the gland is quite large and the uptake is quite low, then we give a little bit more, or if the uptake is very high, we give a bit less. If the patient lives a long distance away and cannot come back for retreatment very easily, we tend to give a little bit more. As Dr. Seed says in his book, if the physician who has referred the patient doesn't really think the treatments are going to do the patient any good, you add a millicurie to your dose to be sure of bringing him under control.

The dosage problem has many facets. In general,

we try to bring the patient under control as quickly as possible, and run the calculated risk of making him hypothyroid, for hypothyroidism is not really a difficult disease to treat. We shall talk more about this later.

Dr. Burcham: In numbers of millicuries, in what range do you work in treating this disease?

Dr. Hendrickson: In treating Graves' disease, I don't believe I have ever given anyone more than 10 millicuries or fewer than five. Usually, the dose is in the six-to-eight millicurie range.

COMPLICATIONS OF I^{131} THERAPY

Dr. Burcham: Now the next thing on my outline is the matter of complications of I^{131} therapy for toxic goitre. If you will, Dr. Peterson, we'd like you to limit your remarks on this subject to just a few pertinent points.

Dr. Peterson: The most frequent complication (see Table 2) is certainly that of hypothyroidism. The incidence varies from 10 to 20 per cent in different clinics. Most such patients are only temporarily hypothyroid, the difficulty appearing anywhere from five to eight months after treatment. The majority of them will return to euthyroid function, some without any substitution therapy, or if the physician and the patient are anxious, substitution therapy for a few months will take care of the matter. This is certainly the most frequent problem, but it is a slight one.

One other problem—one that hasn't arisen but has been looked for—is neoplastic complications. Certainly thyroid neoplasms following irradiation in adults have rarely if ever been found, although they are found in experimental animals.

A few cases of acute leukemia have occurred in patients treated with radioiodine, but the incidence does not appear to be any greater than that which would be expected in the general population without any radiation therapy. Certainly the average radiation dose to the bone marrow of about 10 rads from I^{131} treatment is of the same magnitude as that received during common diagnostic x-ray surveys, including films and fluoroscopy (lumbo-dorsal spine, intravenous pyelogram, cholecystogram, and upper and lower gastrointestinal series).

Dr. Kniseley: People have also been concerned about the possibility of parathyroid involvement from this treatment, and it might be worth interjecting here that it hasn't been a problem, despite the proximity of the parathyroid to the thyroid. I recently had a chance to look at an autopsy specimen where the thyroid gland was completely fibrotic after therapy for hyperthyroidism. Normal parathyroids were present.

SOME COMPARATIVE FIGURES

Dr. Burcham: Dr. Hendrickson has gathered a few comparative figures on medical vs. surgical vs. radiation therapy for these conditions that we

have been discussing. I'd like him to present them.

Dr. Hendrickson: I shall try to make this brief. I am sure you all realize that the surgical control of Graves' disease is very good. Most surgical statistics indicate quite adequate control of 90 per cent of patients so treated. I think that the medical control of Graves' disease is likewise very good, being better than 90 per cent. The literature on the control of Graves' disease with I^{131} similarly indicates a control rate in the high 90's. In most of the series, the people who have not been controlled have been those with nodular toxic goitres. Thus, Graves' disease is a relatively easy one to talk about, since control is virtually complete. One can retreat the patients in whom there has been a failure initially.

I think it is the complications of the treatment that are most important in determining the choice of modalities. The incidence of hypothyroidism, as Dr. Peterson has suggested, has run between 10 and 20 per cent in various reported series. Usually it is transitory and of no serious consequence. The surgeons encounter about the same incidence of hypothyroidism as do the radiologists, but I really couldn't find any statistics on the incidence of hypothyroidism following medical management. Doubtless the reason is that the patient can be adjusted so readily from month to month.

Another important consideration is the hypo-

parathyroidism that Dr. Kniseley was referring to. And again in Graves' disease where subtotal thyroidectomy is performed, it is not or should not be a surgical problem. Likewise, it doesn't occur with the other methods of treatment.

The incidence of recurrent laryngeal nerve damage averages about 0.5 per cent in most surgical series, even with subtotal thyroidectomy. Medical and radiation treatments produce no nerve damage. The possible effect of the drugs on the leukocytes is a problem in medical management. Surgery certainly doesn't affect the leukocytes at all.

As Dr. Peterson has indicated, leukemia has followed some courses of radiation therapy, but the incidence does not appear to have been higher in such patients than in the general population.

One very important thing, I believe, is the progressive exophthalmos which we sometimes see in severe cases of Graves' disease. Here, the question is one of which is worst, rather than of which is best among the types of treatment, for some patients have progressive exophthalmos following each of the therapies. Surgery is worst in this respect, for severe exophthalmos following surgery is a moderately frequent occurrence. The incidence following medical or radiation therapy is lower.

Dr. Burcham: The remainder of this meeting, we

TABLE 2
COMPLICATIONS OF HYPERTHYROIDISM THERAPY
Comparison of Different Treatments

	<u>Antithyroid</u>	<u>Surgery</u>	<u>Iodine¹³¹</u>
Leukopenia, fever, rash	0.5-5%		
Agranulocytosis	0.2-2%		
Hepatitis			
Thyroid storm		0.1%	0.1%
Laryngeal nerve injury		1.0%	
Hypoparathyroidism		1.0%	
Hypothyroidism		3-10%	10-20%
Recurrent hyperthyroidism	>50%	>5%	<1%
Mortality Rate	0.05-0.5%	0.7%	0.03%*

*Consisting of 0.01% attributed to thyroid storm fatality and 0.02% attributed as a potential 20% increase in incidence of leukemia.

Sources: Alexander - Reactions with Drug Therapy, 1955
McCavack - The Thyroid, 1951
Werner - The Thyroid, 1955
Argonne Conference on Radioiodine, 1956

shall turn over to Dr. Culp. He is an expert in the urologic uses of radioisotopes, and we are all very much interested in the fine work being done at the State University of Iowa.

RADIOACTIVE GOLD FOR PROSTATIC CANCER

Dr. David A. Culp:* As you know, since 1951 the Department of Urology at the State University of Iowa has been utilizing radioactive isotopes of gold for the treatment of carcinoma of the prostate. I shall attempt to give you a review of our material, together with a report of our results to date.

* Dr. Culp is a professor of urology at the S.U.I. College of Medicine.

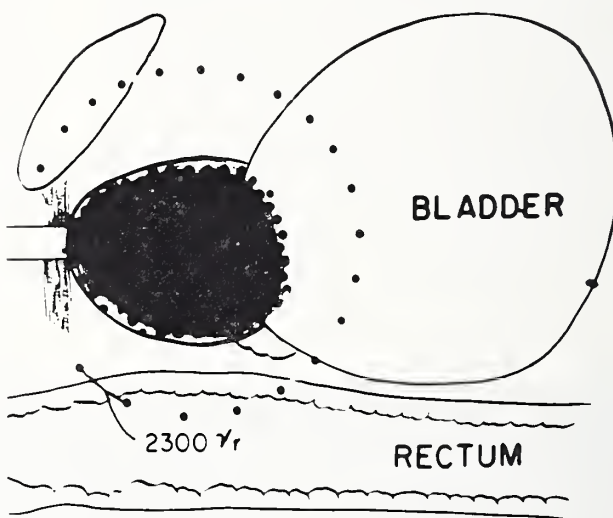
Perhaps the thing we should spend most time on is the selection of patients for treatment with radioactive gold. We have divided cases of cancer of the prostate into three groups. The first of these includes those patients in whom the cancer is still confined to the prostate gland. It has not invaded the true capsule. For this group, our treatment has remained radical retropubic prostatectomy. About five to 10 per cent of the patients whom you see with cancer of the prostate will fall into this group.

We have always had a type of therapy for the Group III patients—those whose carcinoma has spread beyond the gland, either locally so as to fix the gland to the surrounding tissue, or to the lymph nodes in the pelvis, or to the bones. It con-

RADIOACTIVE GOLD

1½ mc of colloidal Radioactive gold contains:

7250 γ roentgens/cc
114,000 rep./cc of tissue



RADON SEED

29 mc Radon
7250 γ roentgens/cc

KEY:

• - number proportional to amount of γ roentgens

■ - β rep.

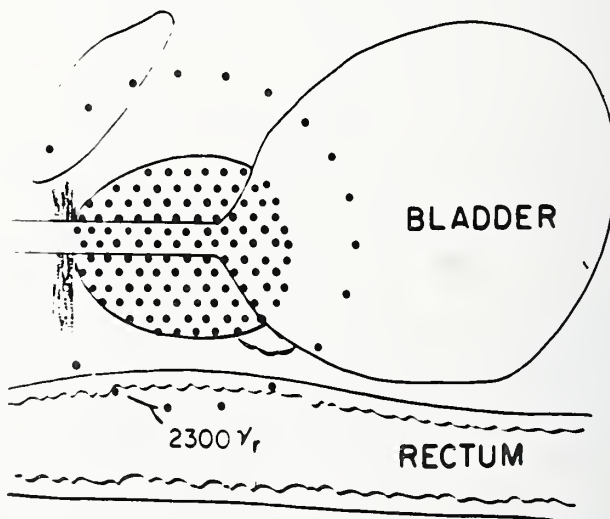


Figure 3. (Bottom) In the delivery of 7,000 r. to the prostate by means of radium implants, the rectum would receive about 2,300 r., and if this gamma dose were to be exceeded, rectal complications would develop. (Top) With radioactive gold, 7,000 gamma roentgens can be delivered, and in addition 114,000 reps./cc. of gamma irradiation, the effects of which will remain confined to the prostate because of the weak penetrating qualities of the beta ray.

sists of estrogen therapy, orchiectomy, cortisone therapy, adrenalectomy or a combination of any of those modalities. About 40-50 per cent of the patients fall into this group when we first see them.

It is in Group II that we have undertaken to use radioactive isotopes. These patients have a lesion that has spread locally so as to eliminate the use of radical prostatectomy, but fail to show evidence of distant spread. The serum acid phosphatase remains normal, and the bones show no evidence of metastatic lesions on the x-ray films. As far back as the 1890's, radium was used in treating cancer of the prostate. Hugh Young and some of his associates, in this country in 1911-1915, used radium and achieved some very satisfactory results as far as destruction of the neoplasm was concerned. Their main problems were the complications—rectal and bladder irritation, ulceration and fistula formation. These difficulties occurred in such a high percentage of patients that the treatment was abandoned.

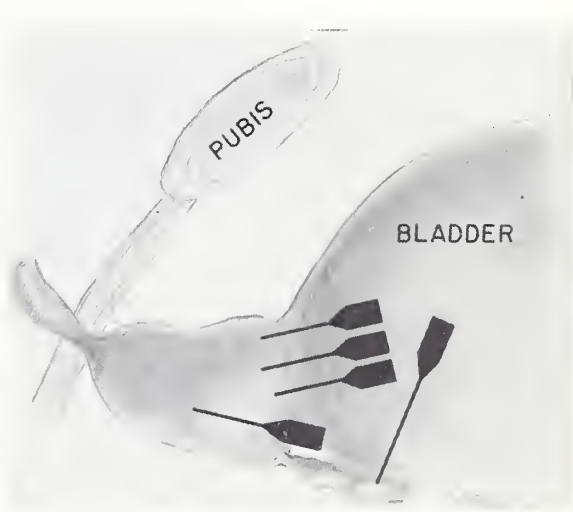
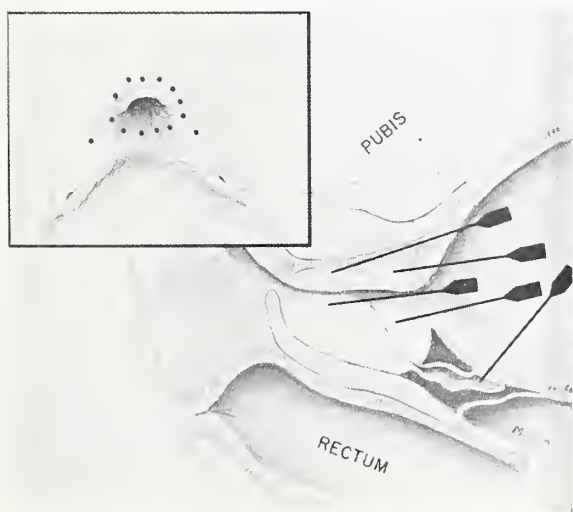
With the advent of radioactive isotopes, a new mode of radiation therapy became available, one which afforded a more satisfactory control of irradiation, and one which, we hoped, would prevent these complications. Since from 40 to 50 per cent of the patients with carcinoma of the prostate fall into Group II, we felt that something more than palliation should be tried. Thus, in March, 1951, we began to treat carcinoma of the prostate by the interstitial injection of radioactive gold.

Figure 3 shows what we hoped to gain. If one were to utilize radium implants and deliver 7,000 roentgens into the prostate, the rectum would receive about 2,300 roentgens. If this gamma dose were to be exceeded, rectal complications would develop, but with the use of radioactive gold it is possible to deliver the 7,000 gamma roentgens and, in addition, a tremendous dose of beta irradiation—114,000 reps.—the effect of which remains con-

fined to the prostate because of the weak penetrating qualities of this beta ray. We hope by this means to destroy the cancer within the prostate, avoiding complications to the rectum and to the bladder.

Several operative approaches were devised to expose the prostate for injection with radioactive gold. Figures 4 and 5 illustrate the retropubic approach. The gland is exposed through a suprapubic incision, and the bladder is opened. The injection is accomplished by infiltrating the neoplasm through a series of injection sites, transvesically and intraurethrally. About 0.5 cc. of the radioactive material is instilled into each fascial compartment about the seminal vesicle, passing the needle through the vesical wall just medial to the ureteral orifice. Additional material is injected into the lateral aspects of the prostate from the apex to the base through the endopelvic fascia. The anterior surface of the prostate is injected through the pubo-prostatic ligaments.

In those glands in which three months after delivery of the initial retropubic irradiation there existed hard nodules, we directed a needle perineally so as to infiltrate the remaining suspicious area. Originally, we thought it would be unwise to expose the prostate perineally through an open incision, for we depended upon Denonvillier's fascia to help hold the radioactive material in place. Too frequently, however, the material wasn't deposited in the desired area, and the neoplasm wasn't affected. In addition, areas not involved by neoplasm were irradiated. Therefore, in order to obtain better distribution, we exposed the posterior surface of the prostate through a perineal incision, and by protecting the rectum with multiple rubber drains, we have avoided complications. With the open perineal approach (Figure 6), we expose the entire posterior surface



Figures 4 and 5. The retropubic approach for the delivery of radioactive gold to the prostate.

of the prostate, expose the seminal vesicles and infiltrate them much more accurately.

Figure 7 shows another route of administration—the transrectal approach. By means of a long Lowsley tractor in the urethra, the prostate can be brought close to the surface where it can readily be felt through the rectal wall. Injections are made directly through the rectal wall into the prostate gland. When one is using this approach, he must be careful to avoid seepage through the needle tract and dripping radioactive material into the rectum.

The transrectal approach was tried, but because of contamination of the irrigating fluid and the hazards it presented to the surgeon and the other operating-room personnel, it was abandoned.

Our results are summarized in Tables 3 and 4. First, let us speak of the complications. A five-year follow-up of our cases shows that we had some rectal ulcerations. These were attributed to several factors. First, the dose of millicuries per gram of tissue was too high. Originally, three millicuries per gram of tissue was administered, the maximum dose being 150 mc. Therefore, we altered the dosage to 1.5 to 2.0 millicuries per gram of tissue. Second, when we first started to inject this ma-

terial, we deposited it much as one would infiltrate novocaine. The distribution was unsatisfactory by this method, and it was difficult to avoid penetrating Denonvillier's fascia and depositing some of the material directly in the rectal wall. Third, we overwhelmed the gland with too large a volume. Actually, the capsule will accommodate only a small volume, and any excess escapes into the fascial planes on top of and around the rectum,

TABLE 3
COMPLICATIONS IN TREATMENT OF CARCINOMA OF THE PROSTATE WITH RADIOISTOPES OF GOLD. S.U.I. HOSPITALS

	Cases			
	1-50		51-500	
	No.	%	No.	%
Rectal Ulceration	8	16	2	0.5
Leukopenia	3	6	6	1.3
Calculus Formation	1	2	14	3
Stricture of Prostatic Urethra	0	0	7	1.6
Total	12	24	29	6.5

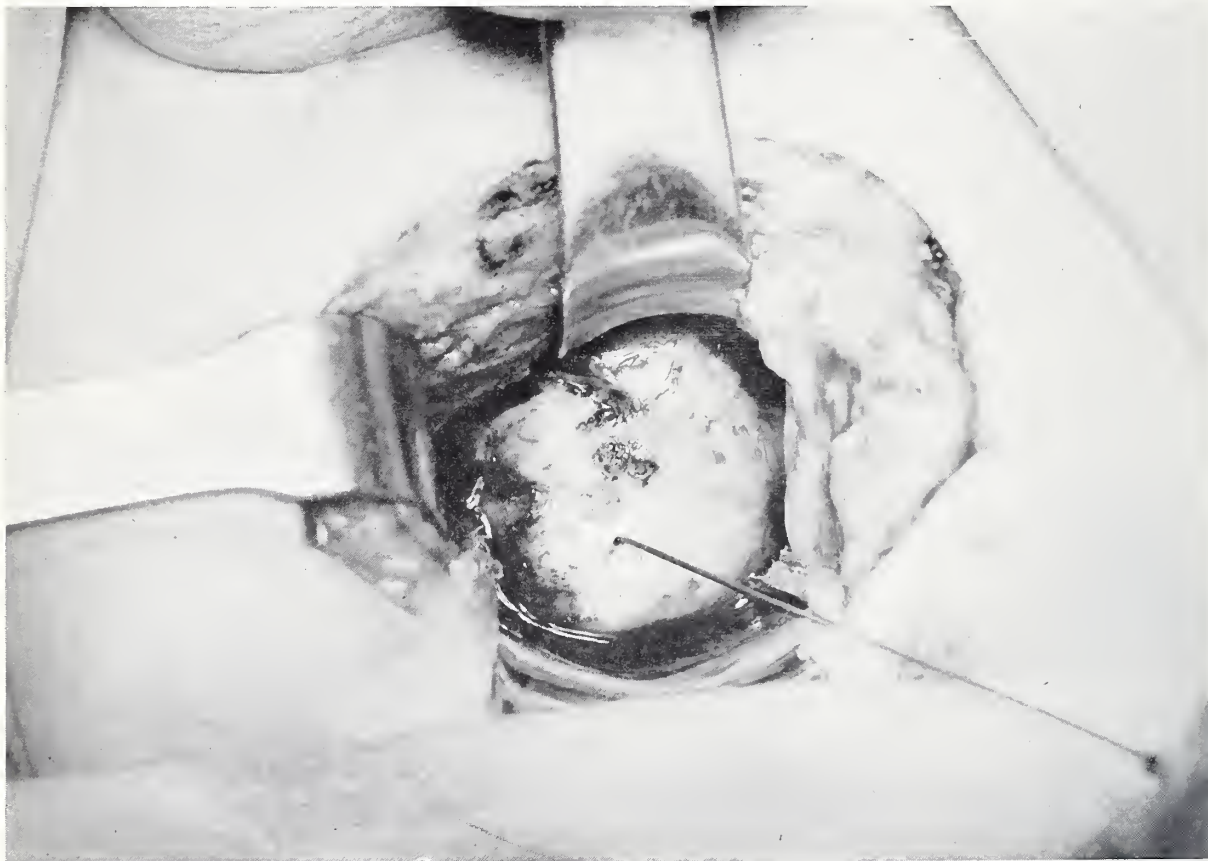


Figure 6. With the open perineal approach, the entire posterior surface of the prostate is exposed, and infiltration can be done much more accurately.

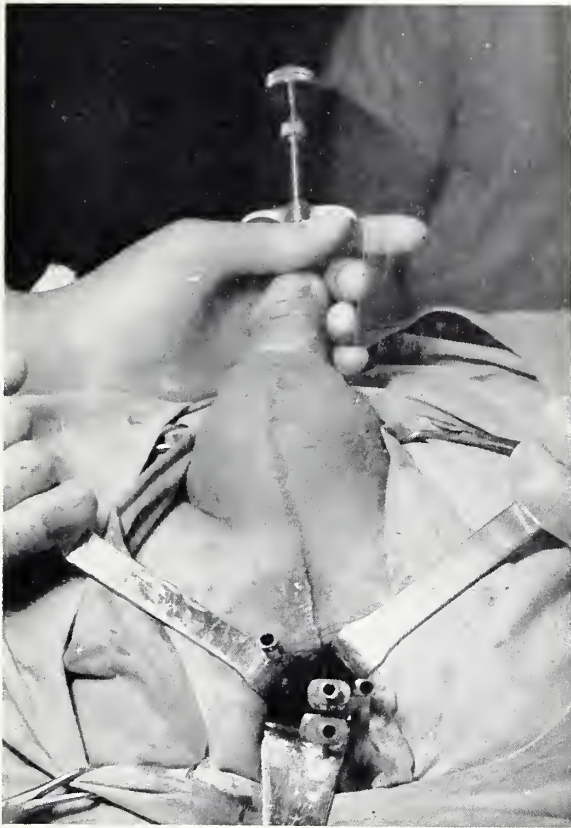


Figure 7. Another route for the administration of radioactive gold to prostate—the transurethral approach. By putting a long Lowsley tractor into the urethra, one can bring the prostate close to the surface, where it can be readily felt through the rectal wall, and injections can be made directly through that wall into the prostate gland.

producing rectal ulceration. Thus, after 100 cases we changed the dose per gram of tissue, the technique of injection and the volume of material instilled. Thereafter, rectal ulceration was no longer a problem.

Leukopenia is a very rare complication. Stone

formation has increased, and has been due to the sloughing tissue in the prostatic urethra which acts as a nidus for the precipitation of calcium salts in the urine.

Evaluation as regards survivals has been very difficult. Frequently patients will survive for periods of 10 to 15 years with carcinoma of the prostate, despite receiving inadequate therapy or none at all. Therefore, a five-year survival study could have little meaning.

I do wish to point out, however, that the size of the gland has a direct relationship to survival. You will note that 91 per cent of the patients who had 20 Gm. of tissue or less remained alive. The larger the glands, the poorer the survival rates. The remainder of the figures in this tabulation are self-explanatory.

Our main problem in the treatment of cancer of the prostate with radioactive gold is obtaining satisfactory distribution of the material in or around the neoplastic areas, for where we get good distribution, we get good destruction of cancer of the prostate.

MEASUREMENT OF KIDNEY FUNCTION

In closing, I should like briefly to present another use of radioactive isotopes by the Department of Urology at the S.U.I. Hospitals. Recently, Winters reported his experiences with a renal diagnostic function test utilizing radioactive Diodrast. The test is performed by injecting the radioactive material intravenously, and continuously recording the activity over each kidney. Normally-functioning kidneys produce a curve which is illustrated in Figure 8. This curve has three principal portions which represent the passage of the radioactive material through the kidney. The initial portion represents the delivery of the radioactive Diodrast to the kidneys through the blood stream. It is characterized by a prompt rise in radioactivity. As the renal tubules remove the radioactive Diodrast from the circulation and concentrate it in the renal parenchyma, a further

TABLE 4

FIVE YEAR SURVIVAL OF 135 PATIENTS FOLLOWING RADIOISOTOPE THERAPY FOR CANCER OF THE PROSTATE. S.U.I. HOSPITALS

Size of Gland (grams)	No. Cases	Alive \bar{s} Clinical Disease	Alive \bar{c} Local Recurrence	Alive \bar{c} Metastases	No. Alive	Per Cent Alive
Under 20	11	9	0	1	10	91
20-34	17	6	2	0	8	47
35-54	54	12	1	6	19	35
55-100	33	3	2	2	7	21
Over 100	20	2	0	0	2	10
Totals	135	32	5	9	46	34

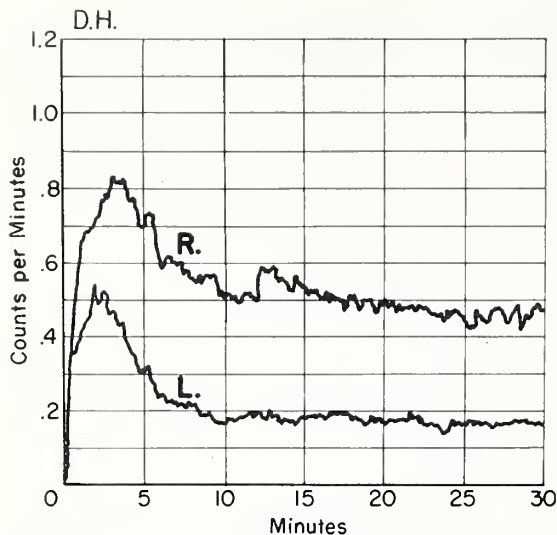


Figure 8. This curve represents the passage of radioactive material through a normal kidney. The initial portion represents the delivery of radioactive Diodrast to the kidney through the blood stream; a further rise in radioactivity is recorded as the material is concentrated in the renal parenchyma; the final section reflects its expulsion through the calyces, pelvis and bladder.

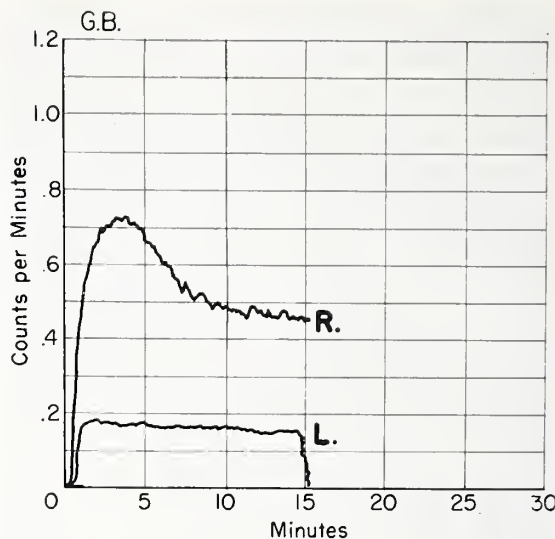


Figure 10. Tracings obtained from a patient whose left kidney had been surgically removed. The curve for the right kidney is normal, but the one for the left represents only the background from radioactivity in major vessels and surrounding tissues.

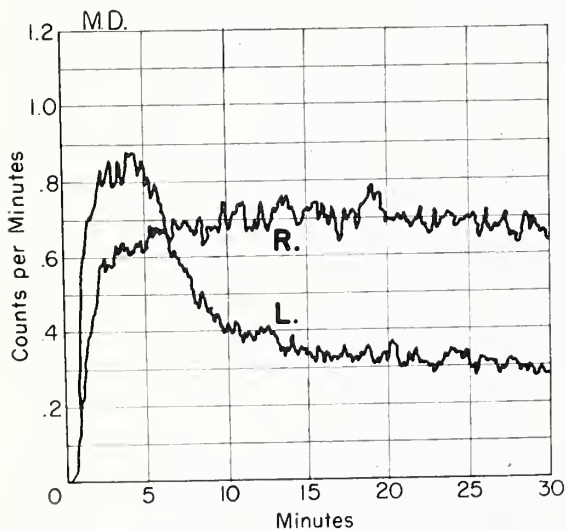


Figure 9. These are measures of the efficiency of kidney function in a patient who had a right hydronephrosis. Delivery of radioactive Diodrast to the right kidney is shown to have been slightly delayed, and expulsion was so slow that the curve hadn't fallen appreciably at the expiration of 30 minutes.

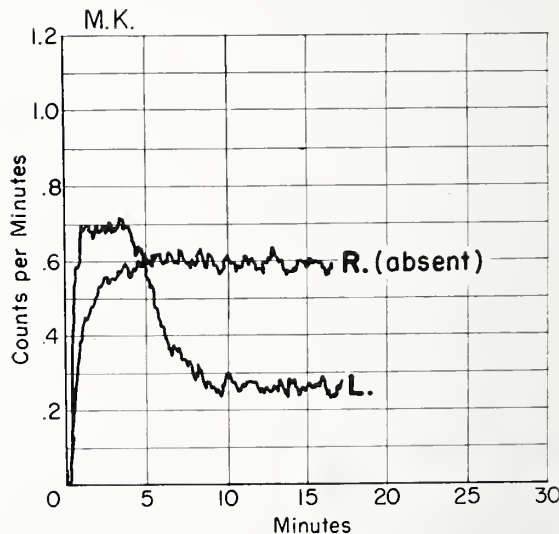


Figure 11. The tracing representing an absent right kidney isn't a mirror image of Figure 10 because the mass of the liver and its pool of blood supply more background radioactivity on that side.

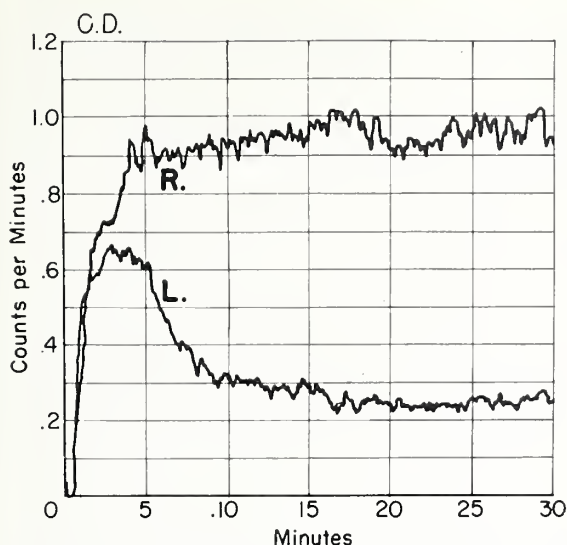


Figure 12. These curves represent the renal function of a patient whose right kidney had suffered infarction. The close similarity between the curve for this patient's left kidney and the one for the left kidney of the hydronephrosis patient (Figure 9) shows that this evaluative technic needs some further refining.

increase in radioactivity occurs. The final portion of the curve represents the transportation of the radioactive Diodrast from the kidney through the calyces, pelvis and ureters to the bladder, and is represented by a moderately rapid decline in radioactivity. Generally, this test requires only 15 minutes to complete. It is relatively easy to perform, and has produced no complications.

Variations in the blood flow through the renal arteries, the function of the tubules in extracting the radioactivity, or a block in the post-renal conducting channels will produce changes in the normal curve. Figure 9 depicts the tracing obtained from a patient who had a right hydronephrosis. Two deviations from the normal curve can be noted. First, the delivery of radioactivity to the kidney is slightly delayed, and second the release of radioactivity from the area of the kidney has been markedly retarded, so that the curve does not show a decrease in the amount of radioactivity even after 30 minutes.

Figure 10 reveals the tracing obtained from a patient whose left kidney had been surgically removed. The right kidney tracing is normal, but the tracing of the left represents only the background from the radioactivity in the major vessels and surrounding tissues. An absent right kidney reveals a similar tracing (Figure 11), except that the level of the background activity is higher because of the large mass of liver with its large pool of blood. The presence of the liver on the right side produced technical difficulties in recording a true curve of the activity in the right kidney, but by positioning the patient and the receiving

column, and increasing the shielding about the crystal, we reduced the interference from the liver to a minimum.

Difficulties in interpretation of the curves have arisen, and a large number of patients need to be investigated before the true significance of the test can be established. Figure 12 depicts the curve traced by a patient whose right kidney had suffered infarction. Grossly, at least, this curve differs in no way from that of the hydronephrotic kidney (Figure 9). Therefore, before any real significance can be attached to the test, additional work must be undertaken, but I thought you would be interested in getting a glimpse of another way in which we are attempting to utilize radioactive isotopes as an aid in the diagnosis of medical problems.

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OBSERVANCE OF FIRE-SAFETY CODES

Speaking at the three-day fall conference of the National Fire Protection Association in Des Moines in mid-November, Mr. Roy Hudenberg, of Detroit, chairman of the organization's Committee on Hospital Operating Rooms, pointed out that standards and codes of fire safety have been developed, and though they are merely recommendations until they are adopted into law, he asserted that "the very existence of the NFPA Code can raise a presumption of negligence when its requirements are not met."

Mr. Robert T. Palmer, chief of the Minneapolis Fire Prevention Bureau, said that hospital managements are responsible for regularly practiced fire emergency plans to prevent panic, the chief danger in hospital fires. Mr. L. G. Matthews, secretary of the International Acetylene Association, New York, warned that the "no smoking rule must be rigidly enforced in the vicinity of oxygen administration, particularly in oxygen tents."

Development and Use of Immunizing Agents and Procedures Since 1934

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WASHINGTON, D. C.

IN DISCUSSING immunizing agents and procedures, it is convenient to divide them into three general categories: (1) Standard—those used more or less routinely; (2) Special—those used to meet special conditions and situations; and (3) Developmental—those which are still in the research and development phase.

STANDARD AGENTS AND PROCEDURES

As we entered the practice of medicine in the mid-thirties, there were available to us a number of generally accepted immunization procedures and practices, some with well-demonstrated effectiveness. These, with brief indications of their status then and developments since, may be reviewed as follows:

Smallpox. The smallpox vaccine available to us then was a living glycerinated calf dermo vaccine subject to relatively rapid deterioration, particularly if stored under other than the most favorable conditions. This product had been demonstrated to be effective, through more than 100 years of experience, provided of course that it was applied properly and that it was viable at the time of its use.

Perhaps the most important thing that has happened to smallpox vaccination in the interim has been the advent of the widespread use of electric refrigeration, for as Leake said in 1943, "The electric refrigerator is perhaps the chief cause of the remarkable decline in the number of smallpox cases which the United States has experienced in recent years." During this time, however, there have been certain other valuable lessons learned, or perhaps relearned. For example, it has been demonstrated that American-produced smallpox vaccine is effective in the prevention not only of the types of the disease encountered in this country but also of the highly virulent hemorrhagic forms seen elsewhere, particularly in the Orient. It has been learned, however, that for the prevention of these latter types of the disease, the level of immunity must be kept high by means of frequent, successful vaccination. The word *successful* requires par-

ticular emphasis, since it is the successful vaccination that is always followed by a definite reaction, whereas no reaction at all means that the vaccine was impotent or that the procedure was performed in an unsatisfactory manner. A fairly recent development in the agent available for vaccination is seen in the currently awakened interest in the dried preparation which should retain its viability for considerably longer than the material generally used at this time.

Diphtheria. Toxin-antitoxin mixtures were still in use in 1934, although toxoid had been described some years earlier, and the alum-precipitated product was being recommended. Several things have occurred during the intervening years. First, the toxin-antitoxin preparation has essentially been lost sight of, and even Schick testing for determination of susceptibility appears to be less and less indicated. Diphtheria itself has declined remarkably in prevalence. With this decline have developed at least two rather interesting situations. Both of these seem to be based upon the reduction of naturally acquired immunity such as follows both clinical and inapparent infections. The first of these situations is that the disease diphtheria is rapidly coming to be one that affects young adults rather than children. The second is that for the development of effective immunity, better and better antigens are required than were necessary in former years. Furthermore, these antigens must be administered more frequently if the disease is to be prevented.

Thus, whereas 25 years ago it was considered good practice to immunize all young children against diphtheria just once, that practice is inadequate today. At least two subsequent booster doses are required in order to assure immunity to the child through the adolescent years.

As indicated, the immunizing agents themselves have been improved considerably and their antigenicity has been increased somewhat through alum precipitation or aluminum phosphate adsorption. Also, most practical immunologists agree that the combination of diphtheria toxoid with tetanus toxoid and pertussis vaccine may lead to some increase in antigenic powers. With the low prevalence of diphtheria in this country, however, the young adult and young middle-aged person cannot

Dr. Long is chief of the Preventive Medicine Division in the Office of the Surgeon General, Department of the Army. As a member of the Class of 1934, he made this presentation at the All-Medical Alumni Reunion of the S.U.I. College of Medicine, in Iowa City on June 12, 1959.

be neglected, since in several studies it has been determined that 50 per cent or more of individuals above 20 years of age are diphtheria-susceptible. For the immunization of this group, a new product has been developed—tetanus-diphtheria toxoids combined, for adult use. This agent contains a full dose of tetanus toxoid and a small, though adequate, stimulating dose of diphtheria toxoid. It may be used with relative freedom from the untoward reactions which accompany the use of the pediatric type of material in adults.

It is of some interest that the child who has received at least a basic series and one stimulating dose of diphtheria toxoid may be considered as an adult immunologically, in this respect, and can be expected to respond adequately to a stimulating dose of the adult type of tetanus-diphtheria toxoid combination.

Pertussis. A pertussis vaccine was available in 1934, but it was not until several years later that the agent was improved to the extent that its value could be clearly demonstrated. Its combination with other antigens such as diphtheria toxoid followed soon thereafter, as did improvement through the better selection and propagation of strains, and combination with precipitating agents and diphtheria and tetanus toxoids into the well-known DPT preparation. It is to be noted that a new tetravalent agent has very recently become available. This contains diphtheria and tetanus toxoids with pertussis and poliomyelitis vaccines. The administration of such a material at an early age—three months or less—is now clearly indicated. There appears little need for the use of this combination later than the child's second year, however, because pertussis then loses considerable significance, and the reactions to combined antigens increase.

Typhoid and Paratyphoid Fevers. Vaccines for protection against typhoid and paratyphoid fevers have been in use, for military personnel at least, since shortly after 1900 in this country, and have generally been conceded to be of at least moderate effectiveness. The materials in use have changed very little during the intervening years. There has been some improvement in the choice of strain and in the manner of its propagation. The major change, perhaps, has occurred in the dosage. Prior to and during the early phases of World War II, the basic immunization was accomplished by injecting a first dose of 0.5 ml. and two subsequent doses of 1.0 ml. each. Every three years, this painful and frequently reaction-producing procedure was repeated. This practice has been changed considerably, and now the basic immunization is accomplished by the administration of three subcutaneous injections of 0.5 ml. each at intervals of not less than seven days, and reimmunization through the administration of 0.1 ml. intracutaneously or 0.5 ml. subcutaneously.

In current routine military practice, this basic

immunization is reinforced through the injection of only two of these stimulating doses, and these at four-year intervals. More frequent vaccinations are, of course, required for overseas travel to areas where the danger from typhoid and paratyphoid fevers is considerably greater than it is in this country.

Scarlet Fever. In 1934, the Dick test had been available for about 10 years, as had the use of the graduated doses of Dick toxin measured in multiples of skin-test dose units. The protection afforded by this agent was aimed, apparently, more at the manifestations of the erythrogenic toxin than at the infection itself. Immunization against scarlet fever seems now to have all but disappeared from the prophylactic armamentarium. Some institutions and hospitals may still be using it, but not very many of them. Fortunately, more attention and emphasis are now given to the early diagnosis and prompt, adequate therapy for the streptococcal infection itself, thus preventing many of the complications and sequelae of these infections, rheumatic fever and nephritis. In some instances, such as in groups where the streptococcal infection rates are inordinately high, it has become the practice, on occasion, to administer routine penicillin as a preventive rather than as a therapeutic agent. Similarly, for individuals who have experienced a clinical attack of rheumatic fever, the administration of penicillin for the prevention of subsequent streptococcal infections is now considered a practical and highly effective measure by many students of those diseases.

Tetanus. Passive protection against tetanus through the use of antitoxin was well known and generally practiced in the mid-thirties. Active immunization with toxoid, though practiced to a limited extent in Europe even before 1930, was not generally accepted here until the eve of World War II. The proving ground was then provided for the demonstration of the almost complete effectiveness of this material for the prevention of tetanus. The entire U. S. Army, for example, experienced but a dozen cases of this disease throughout the entire war period. As a result, tetanus toxoid has now all but replaced antitoxin for specific protection.

Considering the reactions which all too frequently follow the use of antitoxin, it is fair for one to say that tetanus toxoid is appropriately given for two purposes: (1) to prevent tetanus and (2) to avoid the necessity for administering antitoxin. The general use of toxoid has also firmly established one of the now commonly understood basic principles of active immunization—the basic preparation of the immune mechanism of the individual through the administration of a basic or conditioning series of antigenic doses. The booster or recall dose then calls forth the immunity required to meet the emergency situation. It has been learned, in connection with tetanus, that a satisfactory response

to the emergency or recall dose may be expected as long as 10 years after the administration of the basic preparation. In military practice, however, this basic preparation is maintained through the administering of a single dose at intervals of four years.

Poliomyelitis. The other and certainly the most recently added of the standard procedures is poliomyelitis vaccination. It was, of course, the brilliant Nobel-prize-winning work of Enders and associates in developing methods for the propagation of poliomyelitis virus in non-neural tissue preparations that paved the way for the Salk vaccine development in 1953. This vaccine, a formalin-inactivated virus suspension, produces circulating antibodies but does not prevent the virus from living and multiplying in the intestinal tract. It appears to provide a definite protection for a very large proportion of persons, and it is generally agreed that it should be administered to all individuals—certainly to all those under 40 years of age. A fourth or booster dose is now recommended for those individuals who may be subjected to more than the usual hazard of infection with polio virus.

Believing that killed virus may not be completely effective, other workers have developed a vaccine from living, attenuated strains, these materials to be administered orally. Considerable effectiveness has been demonstrated in early trials. The possible reversion of the avirulent strains to virulent ones will undoubtedly affect the development and adoption of vaccines of this type.

Thus, we have essentially lost one of the standard or fairly common immunization procedures of 25 years ago, scarlet fever Dick toxin, and have added another, the poliomyelitis vaccine of Salk.

SPECIAL AGENTS AND PROCEDURES

Rabies. The prophylactic treatment of persons who have been bitten by dogs or other animals known or suspected of being rabid was, of course, well established long before 1934, and then as now its application posed a great problem to the physician. Within quite recent years, however, there has been considerable change in the materials and methods available for meeting this problem. The demonstration of the effectiveness of hyperimmune rabies antiserum has been an important contribution. This material, if given within a few days after the exposure, seems to provide a great deal of added protection, and perhaps bridges over the gap that is so vital in the cases with short incubation periods. Additionally, the development of a rabies vaccine grown in developing eggs (usually duck), rather than in nervous system tissue, has been a distinct contribution. Such a vaccine, it is hoped, will not only provide the desired protection against rabies infection, which of course is inevitably fatal, but also will be free from the central nervous system type of complication that all too often follows the use of the older type materials.

Tuberculosis. Bacille Calmette Guérin vaccination is highly controversial in America, but is widely used in some European countries. No attempt will be made here to evaluate this procedure, or to indicate those situations where its use might most reasonably be undertaken. There are those who feel, however, that we in America have done equally well in controlling tuberculosis without BCG. It is possible also, without using this agent, to assume that a positive tuberculin reaction indicates infection with virulent tubercle bacilli and to utilize ever more effectively the tuberculin test as an epidemiologic and diagnostic tool.

Influenza. Vaccination against influenza arrived during World War II. Definite effectiveness has been demonstrated for it in study groups experiencing disease caused by types of influenza homologous with those in the vaccine. Strain variation is a problem, and the search continues for an influenza antigen of sufficiently broad antigenicity to cover all possible variants. Meanwhile, many students of influenza recommend continued protection with the strains now known for those persons who are either most likely to be affected severely by the influenza virus or whose service is so vital to the public that their becoming ill might endanger the general safety of the nation.

Yellow Fever. Yellow-fever vaccination as currently practiced was developed in the late thirties and brought into general use in the early part of the War. The vaccine is a suspension of living virus of the 17D strain obtained by chick-embryo culture. This is one of the most effective procedures available, and it has doubtless been a very important factor in the reduction of yellow fever in various parts of the world. For Americans today, its principal value lies in its availability for use in connection with travel to or through yellow-fever areas where protection from disease is desirable and freedom from quarantine restrictions is convenient.

Epidemic Typhus Fever. The vaccine currently used for protection against epidemic typhus fever was developed in the early stages of World War II, and is a suspension of formalin-killed epidemic typhus rickettsia and the soluble antigen, these having been obtained by cultivation of the organisms in the yolk sacs of fertile hens' eggs. It is generally considered to be very effective for the prevention of typhus fever and for the amelioration of the clinical cases that occur despite the protection thus afforded. It should be remembered that this, like the yellow fever and influenza vaccines, is an egg-produced material and should not be administered to individuals known to be highly sensitive to egg or chicken proteins.

Cholera. Cholera vaccine, prepared from several strains of virulent cholera vibrios, is a killed bacterial vaccine. It has been used since the early war years for individuals in areas where cholera is likely to be a threat. Used widely by American

military forces during the War, little real evaluation of its efficacy was afforded. Quite likely, it provides some protection at least of a relative nature.

Plague. Vaccine for protection against plague is also a suspension of killed bacilli of strains considered to be virulent in nature. There has been no real proof of its effectiveness, but stimulation of basically vaccinated personnel probably does afford some protection.

Rocky Mountain Spotted Fever. Vaccine for protection against this disease is, of course, a rickettsial preparation closely akin to that used for the prevention of epidemic typhus fever. Considerable protection is afforded through its use. Vaccination is indicated for those whose tasks or avocations require that they make their way through tick-infested underbrush in areas where the disease exists.

Adenovirus Disease (ARD). The adenovirus respiratory diseases, identified as such only in very recent years, are now known to be of considerable importance in groups of young adults such as military recruits. Vaccines for their prevention are quite the most recent additions to the group of available immunizing agents. In fact, these vaccines are not actually available now, for they have been produced in experimental lots only. It is hoped that within the next few months, however, they will become available from commercial sources. Much hope is held for their effectiveness, since in several excellently conducted field trials, protection up to 70 and 80 per cent has been achieved in the prevention of the acute respiratory diseases (ARD) in recruit personnel. There ailments are caused principally by two types of the adenovirus—4 and 7.

It should be noted that the lay press from time to time has referred to adenovirus vaccines as "cold vaccines." There is no evidence to indicate that the adenoviruses are etiologically related to the common cold, and hence vaccines produced from them cannot be expected to afford protection against this ailment.

In addition to this group of immunizing agents and procedures available for special use in meeting particular situations, other agents and procedures are currently under development which may one day be applied either routinely or selectively. These include those designed for protection against measles, mumps, various types of encephalitis, brucella infections, tularemia, anthrax, dengue and others. As long as microbial infections continue to plague mankind, it can be expected that microbiologists and immunologists will search for satisfactory immunizing agents for use in their control.

CONCLUSION

During the last 25 years, many of the immunizing agents and procedures available at the begin-

ning of the period have continued in use and have demonstrated their effectiveness. Some have been markedly improved. New and significant agents and methods for their application have been developed and adopted, and perhaps outstanding among them has been the material for the prevention of poliomyelitis. The period has, however, brought something more than just immunizing materials and methods for their use. It has brought us the realization of the significance and dynamics of the epidemiology and immunology of many of the infectious diseases. We have learned—or should have learned—that the mere suppression or temporary eradication of a disease is not enough. If the natural antigenic stimulation provided by natural infection, clinical or sub-clinical, is lacking, this stimulation must be provided artificially. Thus, absence of disease brings us to a high order of susceptibility to the absent one. Through this realization we are brought to an even more important awareness, namely that once a program of infectious-disease control is initiated, those responsible are committed to its enforcement for an indefinite length of time, if the population involved is not to become so highly susceptible to the disease in question that the subsequent reintroduction of the missing pathogen could result in a devastating pandemic. These lessons are important ones, and we must constantly remind ourselves of them.

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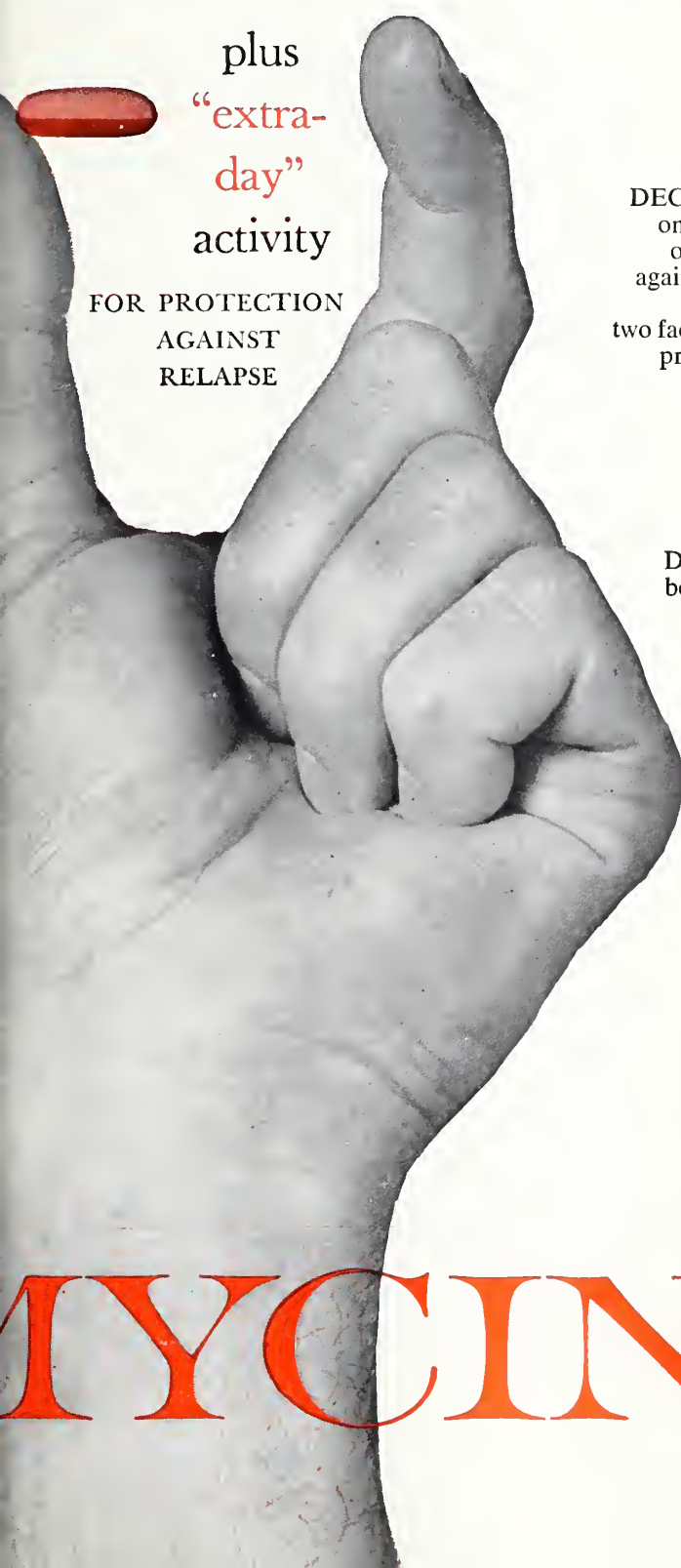
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*Hirsch, H. A., and Finland, M.:
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Cardiac Arrest Treated by Manual Systole And Artificial Kidney

R. L. LAWTON, M.D., AND E. D. LARDNER, M.D.

IOWA CITY

POTASSIUM INTOXICATION is a frequent complication of acute renal insufficiency.¹ It can be successfully treated by extracorporeal hemodialysis. Since the association of cardiac arrest with an elevated serum potassium is well known, anyone dealing with hyperkalemic patients should be alert to this danger and should be prepared to institute cardiac resuscitation.

However, the successful reestablishment of the circulation does not resolve the basic problem of disordered chemical state, and the spectre of potassium poisoning is as threatening as before. In a locality where an "artificial kidney" is available, hemodialysis should be considered early in the course of oliguria due to acute renal insufficiency, and once hyperkalemia is apparent, dialysis should be promptly instituted.

In the case reported below, cardiac arrest interrupted preparations for a scheduled dialysis. This fortuitous circumstance presented us the unusual opportunity of treating potassium intoxication rather soon after a successful cardiac resuscitation—in this instance about 90 minutes afterward.

CASE REPORT

E. E. G. (No. 33466), a 31-year-old white male, was transferred to the Iowa City Veterans Administration Hospital with a diagnosis of small-bowel obstruction. His illness had begun seven days previously (during the influenza epidemic) with cramping midabdominal pain, vomiting and progressive distention. The intestinal obstruction had been complete for three days prior to admission.

Examination on admission revealed a thin, dehydrated and acutely ill patient. The blood pressure was 160/80 mm. Hg., the temperature was 100.6°F., the pulse was 120 per minute and the respiratory rate was 22 per minute. The abdomen was distended, tense and tympanitic, with signs of rather diffuse and generalized peritoneal irritation. No mass was felt. Bowel sounds were present, but hypoactive.

The initial laboratory values included: hemoglobin 14.9 Gm.; leukocyte count 22,500; and urine pH 5.0 and specific gravity 1.018. Films of the abdomen revealed a pattern compatible with distal

small-bowel obstruction. Rehydration was begun with intravenous fluids and a laparotomy was performed. At operation, there was an extensive pelvic peritonitis and a pelvic abscess resulting from a perforated, gangrenous appendix. The appendix was removed. A 500 ml. blood transfusion was administered during the procedure.

Eight hours after operation, scleral icterus was noted. Severe hemolytic transfusion reaction had occurred. The subsequent clinical course until death ten days later was characterized by oliguria, progressive azotemia, hyperkalemia and sepsis. There was general clinical improvement in the early postoperative period, but fever and leukocytosis persisted despite drainage of a wound abscess.

Urinary output varied from 50 to 150 ml. per 24 hours. The icterus was transient, lasting only 48 hours. Mild hypertension persisted for several days in the immediate postoperative period. Except for small amounts of oral fluid given on the fifth, sixth and seventh postoperative days, fluid and electrolyte replacement was entirely parenteral. Beginning on the sixth day following operation, 5-10 Gm. of calcium gluconate was given intravenously each day. Potassium was not administered at any time.

On the sixth postoperative day, the patient was irrational and critically ill. At that time, the blood urea nitrogen measured 215 mg. per cent, potassium 4.6 mEq., and calcium 12.2 mg. per cent. An electrocardiogram at that time revealed ST segment and T wave changes consistent with hyperkalemia. A four-hour hemodialysis was carried out with the artificial kidney. There was considerable improvement in the clinical state and blood values thereafter.

On the day following that dialysis, the patient's course became worse, both clinically and as manifested by blood-chemical determinations. Disorientation returned along with signs of neuromuscular irritability and the appearance of "uremic frost." There was a gradual decline in blood pressure. It was difficult to maintain an adequate oral airway, and tracheostomy was established. Preparations were made for a second dialysis on the ninth postoperative day, three days following the first dialysis. The blood urea nitrogen was 215 mg. per cent, the potassium 7.14 mEq., and the calcium 12.2

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mg. per cent. Electrocardiographic changes in QRS, ST segment and T wave were indicative again of hyperkalemia.

The artificial kidney was situated in one of the rooms of the operating suite, and the device was being prepared while arterial and venous cannulation was done on the ward. As the patient was wheeled into the room for dialysis, it was discovered that respirations and cardiac activity had ceased. An immediate thoracotomy revealed the heart at a complete standstill. The exact length of the circulatory arrest cannot be determined, but it was probably under two minutes. After manual compression for 15 minutes, effective contractions returned, and the chest was closed. During the short resuscitation period, 5 Gm. of calcium gluconate was given intravenously, and rapid digitalization was begun with 0.8 mg. of Cedilanid. Immediately following resuscitation and prior to dialysis, the serum potassium was 9.32 mEq/L.

The second hemodialysis was started 30 minutes after the chest was closed and 90 minutes after the cardiac arrest. The 3½-hour dialysis was monitored by electrocardiograph, and significant changes in potassium effect were noted after the first 45 minutes. At the end of the dialysis, electrocardiographic evidence of potassium intoxication was virtually absent.

Changes in blood-chemical values were again striking, but they caused little clinical improvement, and the patient remained essentially unresponsive. Blood pressure and pulse were stable during the next 12 hours. Shortly before death, an electrocardiogram revealed nodal rhythm. Gradual hypotension developed, and the patient expired 18 hours following cardiac arrest, resuscitation and hemodialysis. An autopsy was not obtained.

COMMENT

Among the causes of cardiac arrest, potassium intoxication is well established. In acute renal insufficiency, the appearance of hyperkalemia poses a problem, for it may be the cause of sudden death. The early recognition of acute renal failure and the subsequent care with which fluids and electrolytes are managed are of great importance. In the chemical interplay affecting the heart, there seems to be an antagonism between calcium and potassium.² In a sufficient dose, either may lead to cardiac standstill. The added factor of digitalis administration brings another consideration into account, since the calcium effect may be potentiated by digitalization, the general effect being an antagonism to potassium.

Under the circumstances which obtained in the case just reviewed, there was no alternative to a second dialyzation of the patient. It is felt that the administration of calcium and intravenous digitalis were of benefit in the immediate post-resuscitative period.

SUMMARY

We have reported a case of cardiac arrest due to hyperkalemia which was treated by cardiac resuscitation and then extracorporeal dialysis. The cardiac resuscitation was effective, and the hyperkalemia was relieved by dialysis, but the patient died of peritonitis and persistent renal insufficiency.

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S.U.I. Conference in Obstetrics and Gynecology

On Wednesday, January 20, 1960, the S.U.I. College of Medicine will present the following program in obstetrics and gynecology at University Hospitals, in Iowa City. The registration fee will be \$15, and the IAGP has approved the meeting for Category I credit. The following is a list of the speakers and their topics.

- 8:30 a.m. Registration
- 9:00 "Cardiac Disease in Pregnancy"—Dr. H. J. B. Manderson
- 9:30 "The Gray Zone in Obstetrics"—Dr. Norman F. Miller, professor and head of the Department of Obstetrics and Gynecology, University of Michigan
- 10:30 "Management of Small Adnexal Masses"—Dr. Ben M. Peckham, professor and head of

the Department of Obstetrics and Gynecology, University of Wisconsin

- 11:15 "Vesicovaginal Fistulas"—Dr. W. C. Keettel
- 11:45 "Use of Endometrial Biopsy"—Dr. J. T. Bradbury
- 12:00 m. QUESTION AND ANSWER PERIOD
- 1:30 p.m. "Present Concepts of Obstetric Infection"—Dr. C. P. Gopelrud
- 2:00 "Carcinoma of Endometrium—Some Figures, Facts and Fantasies"—Dr. Miller
- 3:00 "Evaluation of Analgesic Agents in Obstetrics"—Dr. W. B. Goddard
- 3:30 "The Place of Biopsy and Conization in the Diagnosis of Cervical Pathology"—Dr. Peckham
- 4:15 PANEL DISCUSSION—RECURRENT ABORTIONS
Dr. Miller
Dr. Peckham
Dr. Keettel

State University of Iowa College of Medicine

Clinical Pathologic Conference

SUMMARY OF CLINICAL FINDINGS

A MALE INFANT was born in the University Hospitals to a 21-year-old mother who had had five previous pregnancies, of which three had resulted in the births of normal infants, but two had resulted in early abortions.

The boy was born following a full-term, uncomplicated pregnancy. The labor was induced and was two hours long. The baby was delivered spontaneously from a left occipital transverse presentation. The birth weight was 3,295 Gm., and the length was 49.5 cm. The occipitofrontal head circumference was 34 cm. The baby cried spontaneously and required no supportive therapy. He was examined on the first day of life, and no signs of disease were recognized.

On the baby's third day of life, the parents signed the hospital's Patient Release Form to take him home. At that time, he was bottle-fed and was taking from 30 to 60 cc. of feeding every four hours. His weight was 3,190 Gm. He was circumcised on that day.

The parents stated that soon after taking him home they noted diarrheal stools, and on the fifth day of life they took him to a physician for that complaint. An oral medication was prescribed, and some improvement was noted. On the fourteenth day of life, the diarrhea recurred. The stools were described as green in color, and there were between six and eight of them each day. He was taken to a second physician, and he prescribed an oral medication that again gave temporary relief.

The details of the infant's home care are not known. The parents said he ate well, he was not particularly fussy, and to their knowledge he did not have fever.

On the morning of his admission (the twenty-fifth day of his life), the diarrhea had increased and he had become markedly irritable and restless. He was again seen by the second private practitioner at 11:00 a.m. The parents were told: "The baby's lungs are clear, and he has no fever." He was given "two pink pills," and he fell asleep. Three hours later, he awoke screaming and could not be consoled. At 5:40 p.m., he was taken to a third physician, who examined him and found "pulmonary congestion and a fever of 108°F." Arrangements were then made for the infant's admission to this hospital.

At 6:35 p.m., when the parents arrived with him at the S.U.I. Hospitals, he was already dead. Resuscitative methods were of no avail. The examining physician described the infant's body as "showing poor nutrition."

SUMMARY OF CLINICAL DISCUSSION

Dr. Henry G. Cramblett, Pediatrics: Frequently, protocols for clinical pathologic conferences contain excess information that can be misleading. Contrastingly, the one that has been given us today contains too little information. Thus I shall have great latitude in speculating about the etiology of the patient's illness.

This male infant was born at University Hospitals to a 21-year-old mother who had had five previous pregnancies. Three of the pregnancies had produced normal infants, but the other two had resulted in early abortions. Thus, in the interval between menarche and 21 years of age, this mother had had six pregnancies—not a world's record, of course, but probably a bit above average. Since the mother was young and had had numerous pregnancies, I shall disregard the fact that she had had abortions. Another reason for my disregarding this information is that I can't think of any condition that would cause miscarriages in two pregnancies but in another would give rise to a full-term infant who would develop a fatal diarrhea. Infections such as toxoplasmosis and cytomegalic inclusion disease that are transferred transplacentally do not involve successive pregnancies.

The protocol states that the patient was the result of a full-term, uncomplicated pregnancy. I don't believe it. How many individuals go through a period of nine months free of illness?

The labor was induced and was two hours long. The baby was delivered spontaneously from a left occipital transverse presentation. The birth weight was 3,295 Gm., and the length was 49.5 cm. The occipitofrontal head circumference was 34 cm. The baby cried spontaneously and required no supportive therapy. He was examined on the first day of life, and no signs of disease were recognized. All this information regarding the delivery and first day of life appears to be entirely normal.

On the third day of life, the parents signed the hospital release form and took the baby home. I wonder whether this early departure was essential because the mother had three other children needing her care at home. The explanation hasn't been given us.

When the infant left the hospital, he was on formula and was taking between 30 and 60 cc. every four hours. This is entirely within normal limits for the age. His weight at that time was 3,190 Gm. There had been a loss of approximately 105 Gm. in the first three days of life, and this again is completely normal.

He was circumcised just prior to leaving the

hospital. As a matter of policy, all babies should be kept in the hospital for at least 24 hours after circumcision, primarily for the detection of any abnormal bleeding tendency or any signs of infection. It is rather seldom, however, that a circumcision becomes infected and serves as a portal of entry for bacteria.

Soon after the child was taken home, his parents noted that he was having "diarrheal stools." The infant was taken to a physician on the fifth day of life because of diarrhea, and an oral medication was prescribed. The diarrhea seemed to be relieved while he was on this medication. On the fourteenth day of life, the diarrhea recurred. The stools were described as green, and there were from six to eight of them each day. The baby was taken to a second physician, and he prescribed an oral medication which again gave temporary relief.

I'd like to pause here to reflect on some of the things that are important in taking a history of a child with diarrhea. The number of stools per day, the quantity of the stool, the presence or absence of blood, pus or mucus, and the color—all these are important in helping us differentiate the causes of diarrhea. Since there is no other information in the protocol, I'll assume that this child had green diarrheal stools containing no blood, pus or mucus.

It would be helpful to know what the oral medications were which the child received on two occasions and which seemed to cause him to improve. Were they antibiotics? If so, we might suppose that the diarrhea was of bacterial etiology. On the other hand, the medication may have been a non-specific one such as paregoric.

As one takes a history relating to medications that the informant is unable to identify satisfactorily, one can sometimes elicit useful information by asking the cost of the drug and the directions that were given for its administration. An expensive substance to be administered at six-hour intervals, one might suppose to have been an antibiotic. One that the instructions said should be administered in relation to bowel movements would more likely have been something like paregoric.

The details of the patient's home care are not known. The parents said he ate well, was not particularly fussy, and to their knowledge had no fever. The diagnosis of meningitis in the neonatal period may be missed, especially if the child is receiving antibiotics. The clinical picture of neonatal meningitis in such instances can be modified by an inadequate antibiotic therapy that is suppressive but not curative. Generally, the child is febrile, fussy, irritable and inclined to vomit. But since such a history is lacking in this case, I shall rule out meningitis as the primary cause of this child's illness.

On the last day of the infant's life, the diarrhea increased, and he became markedly irritable and

restless. A physician who saw him in the morning told the parents that his lungs were clear and that he had no fever. The infant was given two pink pills, and he fell asleep. Three hours later he awoke screaming, and could not be consoled. Another physician, who examined him in the evening, found pulmonary congestion and a temperature of 108°F. Arrangements were then made for the child's admission to University Hospitals, but he was dead on arrival.

The last day of life was characterized by increasing diarrhea, irritability and an episode of screaming. I think that this represented an abdominal catastrophe, probably a ruptured viscus with peritonitis. An alternative explanation for the episode would be the onset of meningitis.

Early on the day of death, an examining physician found the child's lungs to be normal on auscultation. Yet that evening, another physician found evidence of "pulmonary congestion" associated with fever. From this, I think we can conclude that pulmonary edema or pneumonia occurred terminally. Quite often, when an infant is dehydrated the classic signs of pneumonia—i.e., rales—may be absent, only to appear when the child is hydrated. Therefore, since "pulmonary congestion" occurred in what I presume was a dehydrated infant, I shall explain these findings on the basis of pulmonary edema. The latter could be attributed to hyperpyrexia, to direct cardiac damage as a result of infection, or to general metabolic insufficiency with cardiac failure.

In summary, then, this is an infant who was born in our own hospital and who, on the fourth or fifth day of life, developed diarrhea which was not accompanied by fever. The stools were greenish in color, and did not contain blood, pus or mucus. The diarrhea improved on two occasions following administration of an unknown medication or medications.

Now, I should like to ask for some specific information, if such is available. What were the weight changes during the illness, and during what season of the year did the illness occur? What were the medications? Did any other members of the family have diarrhea? Did the examining physician at the S.U.I. Hospitals note any skin lesions? Further, I should like to know whether the infant was dehydrated and/or marasmic.

Dr. John C. MacQueen, Pediatrics: His dismissal weight was 7 lbs. 4 oz., and at postmortem examination his body weighed 7 lbs. 11 oz. The season of the year was March. We don't know the oral medication. There was no other family history of infections, no record of skin lesions, and no description on the protocol from which we can learn whether this was acidotic dehydration or not.

Dr. Cramblett: As I anticipated, there isn't any helpful information not contained in the protocol. Our discussion, then, must center upon the causes of diarrhea in the neonatal period. First of all,

there are dietary causes. By these, I mean such things as excess carbohydrate in the formula. Since this mother had cared for three children previously, I doubt that she would put too much Karo in the formula. Dietary excesses of one type or another wouldn't cause dehydration and death such as occurred in the case under discussion.

Another cause of diarrhea in the neonatal period would be irritants such as laxatives. Unfortunately, many mothers have preconceived ideas about what the characteristics of an infant's stools should be. I recall a mother who had three successive children with fibrocystic disease of the pancreas. Needless to say, she had a distorted idea about the proper appearance of stools in infancy.

There are systemic diseases that primarily involve organs other than the gastrointestinal tract, but are accompanied on occasion by diarrhea. Addison's disease is one of them. There is nothing in the protocol to suggest such a diagnosis, however. Another disease that we must consider is fibrocystic disease of the pancreas. Here again, the stools in this case weren't the ones that are typical of that disease, and there were no respiratory symptoms until the terminal episode. Because of the lack of substantiating evidence, I shan't consider this possibility further.

In an infant with chronic infection, one must consider hypogammaglobulinemia. In this particular instance, the infant could have had the disease only if his mother had had it. All newborns receive gamma globulin from their mothers by transplacental transfer.

Most sporadic cases of diarrhea in the neonatal period are secondary to infections associated with fever which occur outside of the gastrointestinal tract. Such infections include otitis media, upper respiratory infections, pneumonia and meningitis. I'll not consider this further, however, because of the fact that there was no fever during the course of this infant's illness. Moreover, two examining physicians found no evidence of infection outside of the gastrointestinal tract.

I think, then, that this child's primary disease was infectious gastroenteritis. Etiologically, one might consider first the viral causes of gastroenteritis. Viruses are given as a cause of many diseases for which we can't find obvious bacterial etiologies. As far as I am aware, however, there are only two or three viruses which have been etiologically associated with primary diarrheal disease and which can be grown and identified in the laboratory by present technics. There are the ECHO viruses types 18, 19 and 20. Other enteroviruses may cause diarrhea, but the associated diseases—i.e., aseptic meningitis or exanthem—attract major attention clinically. According to the reports of diarrhea due to ECHO viruses 18 and 19, the disease has been uniformly mild and hasn't caused dehydration and death.

Coxsackie viruses are now recognized as important causes of neonatal carditis. Only the fatal cases have been studied in detail, and the entire clinical spectrum of disease that may occur in the neonatal period is still unknown. However, in all cases reported in which diarrhea preceded the actual onset of signs and symptoms of carditis, there was significant fever present. Infections with enteroviruses occur in the summer months, and usually involve more than one member of a family.

Parasitic infections such as amebiasis are infrequent in Iowa, and the stools of this infant were not characteristic of that disease. Fungus infections of the gastrointestinal tract such as moniliasis may cause diarrhea. It usually occurs in relation either to oral thrush or to antibiotic administration.

There are many bacterial causes of gastroenteritis. Shigella infections are important causes of sporadic diarrhea in certain geographic areas of this country. Characteristically, children with shigella infections have fever, but not invariably so. The stools usually contain blood, pus and mucus. Staphylococcal gastroenteritis most often occurs in relation to antibiotic therapy where the normal flora of the intestinal tract have been depressed. An overgrowth of antibiotic-resistant organisms is thus facilitated. While staphylococci are usually considered the cause of epidemic infections in newborn nurseries, these organisms may also cause a chronic type of gastroenteritis in infants. The diarrhea isn't always accompanied by fever, and there may or may not be blood in the stools. I would be unable to rule this out as the etiologic factor in this infant's illness.

It is now recognized that many of the epidemics of diarrhea involving newborns are caused by infection with one of the pathogenic strains of *Escherichia coli*. Although the various pathogenic strains of this organism are usually thought of as causes of epidemic diarrhea in the newborn, they also may cause sporadic cases of diarrhea in neonates. The course of the patient's illness in this instance was entirely compatible with an *E. coli* infection. The green diarrheal stools without blood, pus or mucus, and without fever, are consistent with that diagnosis. *E. coli* infections vary greatly in their severity, from very mild to very severe. An infectious gastroenteritis due to a pathogenic strain of *E. coli* could be a very reasonable explanation for this baby's illness and death.

Some other groups of bacteria have been indicted as causes of gastroenteritis in infancy, but proof of the charge hasn't been altogether conclusive. Here, I might just mention pseudomonas, paracolon organisms and *Proteus morgani*.

I come now to the consideration of what I feel caused this child's illness and death—salmonella gastroenteritis. Over 300 strains of salmonella are currently recognized. These organisms are well recognized as causes of sporadic diarrhea in the neonatal period, and various strains also have been

indicted as causes of epidemic diarrhea in newborn nurseries. In the neonatal period, such infections vary greatly in severity. The disease may consist of very mild diarrhea, with only a few loose stools each day, or it may be an extremely fulminating disease. The various strains of salmonella, in themselves, have varying abilities to cause various types of disease in the human host. In neonatal infections due to salmonella organisms, 90 per cent present primarily as gastroenteritis, which may vary greatly in severity from patient to patient.

It is well documented that salmonella infections in the neonatal period are often quite mild. The incubation period—approximately four or five days—is such that this child may have been infected by his mother at birth. Salmonella gastroenteritis in the neonatal period is more likely than are other bacteria such as *Shigella* to present with loose green stools without blood, pus or mucus, and without fever. Salmonella infections in infants may cause ulcerations in the small intestine, and these sequelae may have accounted for what I think was a rupture of the small intestine and peritonitis terminally.

I think the immediate cause of death in this patient was severe dehydration, with hypernatremia, pulmonary edema and perforation of the small intestine accompanied by peritonitis on the basis of chronic gastroenteritis produced by a strain of Salmonella. I cannot rule out further localizations such as salmonella meningitis.

Dr. Henry Hamilton, Internal Medicine: Could subacute mastoiditis or otitis media have been responsible?

Dr. Cramblett: As I have indicated, certain acute and/or chronic infections outside of the gastrointestinal tract are frequently accompanied by diarrhea. However, since the infant under discussion didn't have fever, and since the examining physicians found no evidence of otitis media, I am discounting that possibility. It is true, however, that purulent otitis media in infancy is not always readily apparent clinically.

Dr. MacQueen: There was a time when otitis media was always high on the list of causes for infant diarrhea, and myringotomies were frequently done for the child who had unexplained frequent stools. Whether the present antibiotic treatment of such infections has changed the picture, I don't know, but I am sure that this possibility at one time would have been regarded as a very likely one to associate with such a history.

Dr. Jack M. Layton, Pathology: The autopsy was limited to the thorax and abdomen, and thus I can't answer the questions about otitis media and meningitis. The child was undernourished and somewhat dehydrated. The lungs didn't collapse into the pleural cavity when the chest cage was removed, but were rigid as liver tissue might be. They were mottled red and blue, and although

they were crepitant, they were not so crepitant as normal lungs would be. The congestion and consolidation were most pronounced in the hilar regions and in the lower lobes, although all lobes of both lungs were involved to varying degrees. The cut surface oozed a large quantity of bloody, frothy fluid. The lungs floated in water. The alveolar capillaries were greatly engorged, and exudation of clear fluid had occurred into the alveoli and the interlobular connective tissue septa. Alveolar lining cells were swollen, and some were desquamated. Many atria and some alveoli were distended by trapped air. In some foci, extravasated erythrocytes were mixed with exudate. Fibrin and neutrophils were absent. Myriads of gram-positive, lancet-shaped Diplococci were present in the alveoli. Grocott's methenamine-silver stain for carbohydrate disclosed that the capsular material of the Diplococci was rich in carbohydrate.

The colon was essentially normal, with no local lesion in any of the bowel sections examined.

The lesions in the lungs were perfect examples of acute pneumococcal lobar pneumonia in the engorgement stage. We know from our previous experience that this was the type of lesion that develops almost completely within about eight to 12 hours and reaches full development within 24 hours. There is very little leukocytic exudation in this stage of the disease. The lesion accounts satisfactorily for the clinical course of the child on his last day. I think it is entirely plausible that the first physician—the one who saw the patient early in the morning—found no physical findings of consolidation in the chest, even though the one who examined the child late the same afternoon found alarming consolidation in the chest and death ensued shortly thereafter.

At the time of the autopsy, the Department of Bacteriology cultivated *Escherichia coli* from the spleen, from the mesenteric lymph nodes, from the wall of the colon and from both lungs. It is entirely probable that the chronic infection that the child had up until the last day was associated with the *E. coli* infection. As Drs. Cramblett and MacQueen have indicated, it was a rather common experience for pediatricians to observe a lessened gastric secretion in an infant who, from any cause, has become badly undernourished. In such cases, the contents of the stomach and of the upper intestinal tract may be insufficiently acid to bring about bacterial inhibition, and in consequence organisms such as those of the colon group which aren't ordinarily inhabitants of the duodenum and stomach, may be present and may cause diarrhea.

The diet of this malnourished infant perhaps was less satisfactory than Dr. Cramblett surmised on the basis of the information available to him, and perhaps the child did have a coliform infection that was sporadically controlled. He was somewhat debilitated, and on the final day of his life he had an acute, severe pneumococcal pneumonia.

Dr. McKee has gone over this case with me in some detail and is interested in the bacteriologic problems that it presents. He has had previous experience with this type of lesion, and it would be apropos for us to hear his comments on the organisms cultivated from the autopsy.

Dr. Albert P. McKee, Bacteriology: I can add very little, and thus I'll take very little time. First, the organisms cultured from the lungs were gram-positive and were labeled by our laboratory as alpha hemolytic Streptococci. I saw the sections of lung with Dr. Layton, and the organisms I saw were as typical Pneumococci as I have ever seen. They were lancet shaped and had such pointed opposite extremities that you could almost prick your finger on them, if only they were large enough.

I think the diagnosis in the laboratory was made on the basis of what the bacteria did in bile and the fermentation of inulin. *Diplococcus pneumoniae* is a peculiar organism. It is extremely difficult to grow unless you inoculate the medium heavily enough. One must always look first to see whether the organism grew. If so, he can then tell whether it fermented the sugar. I have never seen an organism that looked like the ones in this section which, when the test was done correctly all the way through, didn't turn out to be bile-soluble, capable of fermenting inulin, pathogenic for mice, and positive in its reaction to the Neufeld-Quelling test if the right serum was used. We don't use mice much for Pneumococci, for we don't type them very often any more, now that the antiserum is not readily available. When one runs out of a type, he usually can't get it again, and thus there is a certain amount of difficulty. These bacteria looked like Pneumococci to me; they did not look like alpha hemolytic Streptococci.

About *Escherichia coli*, I can be even briefer. These organisms aren't sero-typed, and thus it would be difficult for me to say to which particular group they may belong or what they may have had to do with the infection. Since they were found well distributed at autopsy, they may have made some inroads at some time prior to the child's final hours. Certain serotypes of *E. coli* do have definite toxicity and can affect a patient adversely. Some of them have rather powerful endotoxins such as the Boivin-Merrobeau antigens. These have been proved toxic, and thus they may have contributed somewhat to this child's illness.

Dr. Cramblett: I'll grant that this child died of terminal pneumonia, and not of pulmonary edema. However, I think we must look further in order to explain his entire clinical course. He had diarrhea from the fourth day of life sporadically until his death. It is too bad that we don't know the serotype of the *E. coli* that was found in various parts of his body. Although it is extremely rare for pathogenic types of *E. coli* that cause gastroenteritis to invade and cause septicemia, I suppose it

may occur. Certainly *E. coli* could have accounted for the chronic diarrhea.

Dr. George Bryan, Pediatrics: What was the interval of time between the death of the patient and the collection of specimens in the autopsy room? Could a delay have been responsible for the presence of some of the organisms cultured in the various organs?

Dr. Layton: About three hours elapsed between death and the time the specimens were collected.

The second question concerned the possible significance of the interval on the culturing of the organisms in all the organs. With the cooperation that the Departments of Pathology and Bacteriology exert in minimizing contamination, we usually don't get positive culture results unless there is such an organism in the tissue that was sent. I believe that the presence of *E. coli* in all of these tissues which were submitted reflects an infection with that organism, and not a contamination.

Dr. MacQueen: To be provocative, I should like to approach this case from a point of view quite different from that which Dr. Cramblett chose.

Because the history if this case doesn't provide us with information about chronological weights, volumes and types of feedings offered, the numbers and types of stools, stool cultures, etc., we cannot be sure that this infant had a problem of diarrhea caused by a chronic infection. Although *E. coli* was found in the stool at the time of death, it wasn't typed to prove it to be pathogenic. If it was pathogenic, such organisms in the great majority of cases cause acute and not chronic diarrhea.

Therefore, I am going to take the position that this child's diarrhea was caused by his reaction to his feeding, and that his death was sudden and is as yet unexplained.

All of us who have been responsible for the care of infants have had experience with some who failed to thrive and had diarrhea, the symptoms of which seemed related to their feedings. There is an occasional breast-fed baby who continues to have stools after each feeding and whose weight gain is poor until solid feedings are started. Similarly, there are infants who have frequent stools while taking one type of proprietary feeding and whose problem disappears inexplicably when another proprietary feeding is substituted.

But failure to thrive does not explain this child's death. It is well documented that there is a sizable group of infants and small children who die suddenly and unexpectedly, and whose causes of death cannot be determined by postmortem examinations. The problem of sudden death has been obscured by half-truths and folklore. Unfortunately, some of this material originated in medical literature. For example, an article written in 1917 indicated that an enlarged thymus gland is a common cause of sudden death, and to this day we

must spend time refuting that idea, in spite of the fact that it has been disproved many times. Another unfortunate contribution to the literature—one that was published within recent years—stated that the primary cause of sudden and unexpected death is suffocation.

Recently, there was published an excellent clinical study of a large group of infants whose deaths had been sudden and unexpected.* This group of patients had been investigated in a very complete fashion. Bacteriologic and viral studies had been done. Complete home-situation studies had been performed. Those who had been present at the infants' deaths had been interviewed. The group of patients were compared with a control group who had died suddenly from trauma. This study included 129 infants whose deaths had been sudden and unexpected. The majority of these deaths had occurred during the first year of life, and 85 per cent of the total had died before the end of the second year. This is the age bracket for sudden and unexplained death that has been recognized by others in the past.

It has been suggested that these infants and children die of acute infections. If infections are the cause of death, then such children don't react to infection in the usual way. Infection as a possible cause is accepted because there is evidence that some infants and children cannot react adequately to infections. One cause for an inadequate reaction is the low levels of gamma globulin at this age. Gamma globulin drops to low levels soon after birth, and does not return to its usual childhood level until the second year of life. There are other immunologic systems that can be shown to be immature at this age. It is, therefore, presumed that a child of this age can have infection, not react to it in the usual fashion, and die without leaving signs of a body response to the infection.

Pneumococcal organisms were identified in cultures taken from the patient discussed today. The types of organisms found in the published series of patients who died sudden and unexplained deaths showed that no single organism predictably caused an acute fulminating infection and resulted in this form of death.

Some of the children in the series of patients were known to have had mild respiratory-tract infections. But none of these infections were thought to have been impressive, and in no case was there pathologic evidence to suggest that the infection was severe. Many of the children had demonstrated no evidence of a preceding infection, and there was no pathologic finding suggestive of disease. The commonest postmortem finding was acute hemorrhagic edema of the lungs. It is postulated that perhaps this lesion is caused by an unidentified infection, allergic or anaphylactoid in

type. It becomes apparent that there must be mechanisms of death other than infection—ones not now recognized—that cause sudden and unexpected deaths among infants and children.

Dr. Cramblett has very skillfully and probably accurately summarized the medical problem in the case that we have discussed today. Nevertheless, there are enough questions about this child's clinical course so that I believe my review of unexplained deaths in infants is appropriate.

Dr. Cramblett: I should like to make three more comments. First of all, the child did not have a satisfactory weight gain. Second, I think it would be unusual for parents in less than optimal financial circumstances to take their infant to several physicians in quick succession unless they felt that he was having diarrhea. Certainly, with other children in the family, the parents should have been able to recognize an abnormal stool. Last, *E. coli* may cause recurrent diarrhea. I have seen children relapse following apparently successful antibiotic therapy for *E. coli* gastroenteritis. None of the pathogenic strains of *E. coli* have become resistant to Neomycin, but it seems that if the course of therapy isn't of sufficient length, recurrences may take place.

NECROPSY FINDINGS

1. Confluent lobular pneumonia with foci of hemorrhage, acute, severe, probably due to *Diplococcus pneumoniae*
2. Petechiae of thymus gland, epicardium and pleurae
3. Congestion, acute, of liver, spleen and pancreas
4. Duplication of right ureter, with mild hydroureter
5. Gaseous distention, small intestine and colon.

THE FUTURE OF URINALYSIS

What promise does urinalysis hold for the future? Mrs. Helen M. Free, of the research laboratory of the Ames Company, Inc., undertook to answer this question at a recent meeting of the Ohio Society of Medical Technologists in Columbus.

Referring to medical reports linking the urine catecholamine level to pheochromocytoma, she suggested the possibility of simple urine cancer tests. Screening programs for the very early stages of such diseases as hepatitis, and "detective work" via diagnostic tests which would label persons who are about to contract a disease, she said, are distinct possibilities. With these developments, she noted, it might be possible for instance to have a mumps patient in isolation days before the disease manifested itself, and therapy would be given a distinct time advantage.

*Adelson, L., and Kinney, E. R.: Sudden and unexpected death in infancy and childhood. *Pediatrics* 17:663-697, (May) 1956.

Coming Meetings

In State

- Dec. 8-9 **Surgery (Postgraduate Conference).** SUI College of Medicine, Iowa City
- Jan. 20 **Obstetrics and Gynecology (Postgraduate Conference).** SUI College of Medicine, Iowa City

Out of State

- Dec. 1-4 **American Medical Association Clinical Meeting.** Dallas
- Dec. 2 **Second Annual Scientific Symposium "New Horizons in Medicine."** Memorial Hospital of Long Beach, Long Beach
- Dec. 2-4 **Medical Society of the United States and Mexico.** Valley Ho Hotel, Scottsdale, Arizona
- Dec. 2-5 **Annual Ophthalmology Conference.** University of California, San Francisco
- Dec. 3-4 **First Annual Graduate Medical Education Conference-Residency Training Program.** University of Pennsylvania, Philadelphia
- Dec. 3-4 **Respiro Cardiac Resuscitation (The American College of Cardiology).** New York City
- Dec. 4-5 **Clinical Hematology.** Stanford University, San Francisco
- Dec. 4-6 **American Psychoanalytic Association.** Biltmore Hotel, New York City
- Dec. 5-6 **Second Part, Third Annual Meeting, Medical Society of the United States and Mexico.** Las Vegas
- Dec. 5-10 **American Academy of Dermatology and Syphilology.** Palmer House, Chicago
- Dec. 7-11 **Fifth Annual Course, Diseases of the Chest (American College of Chest Physicians).** Ambassador Hotel, Los Angeles
- Dec. 7-18 **General Surgery.** Cook County Graduate School of Medicine, Chicago
- Dec. 9-12 **Thirteenth Postgraduate Assembly in Anesthesiology (New York State Society of Anesthesiologists).** Hotel New Yorker, New York City
- Dec. 10-11 **Mycobacterial and Mycotic Diseases (TB Association of Greater New Orleans, Louisiana State University School of Medicine, Tulane University School of Medicine, Orleans Parish Medical Society).** Louisiana State University Medical School, New Orleans
- Dec. 11 **American Rheumatism Association.** Henry Ford Hospital, Detroit
- Dec. 11-12 **Mental Retardation (Annual Meeting, Association for Research in Nervous and Mental Disease, Inc.).** Hotel Roosevelt, New York City
- Dec. 11-12 **Glaucoma Symposia.** University of Kansas School of Medicine, Kansas City
- Dec. 11-12 **Symposium on Salt and Water Metabolism (New York Heart Association).** Biltmore Hotel, New York City
- Dec. 28-Jan. 16 **Second Bahamas Surgical Conference.** British Colonial Hotel, Nassau, Bahamas
- Dec. 29-30 **International College of Angiology.** Hotel Continental, Mexico City
- Jan. 8 **American Laryngological, Rhinological and Otolological Southeastern Sectional Conference.** Philadelphia
- Jan. 9 **Northwest Society for Clinical Research.** Seattle
- Jan. 11-13 **American Academy of Allergy.** Hollywood Beach Hotel, Hollywood-by-the-Sea, Florida
- Jan. 11-13 **Ophthalmology for Specialists.** Center for Continuation Study, University of Minnesota
- Jan. 11-15 **Fifth Postgraduate Course, Current Concepts of the Rheumatic Diseases—Their Recognition and Management (American College of Physi-**

cians). Lecture Hall, Cornell University Medical College, New York City

- Jan. 13 **Los Angeles County Heart Association Fourth Annual Midwinter Symposium.** Statler-Hilton Hotel, Los Angeles
- Jan. 15-17 **Advances in the Diagnosis and Treatment in Gastroenterology.** University of Southern California, Los Angeles
- Jan. 16-18 **Man and His Environment: The Air He Breathes (The University of California School of Medicine and U.C. Extension).** San Francisco
- Jan. 17-30 **Second Bahama Medical Serendipity Conference.** British Colonial Hotel, Nassau, Bahamas
- Jan. 18-21 **The Heart: Rheumatic and Congenital Heart Disease.** University of Kansas School of Medicine, Kansas City
- Jan. 18-22 **Neuro-Ophthalmology.** New York University, New York City
- Jan. 20-22 **Eighth Postgraduate Course, Diabetes and Basic Metabolic Problems (The Committee on Professional Education of the American Diabetes Association).** Ambassador Hotel, Los Angeles
- Jan. 21-23 **American College of Surgeons, Sectional Meeting.** Brown Hotel, Louisville
- Jan. 21-23 **Surgery for Surgeons.** Center for Continuation Study, University of Minnesota, Minneapolis
- Jan. 23 **Orange County Heart Association Annual Symposium on Heart Disease.** Gourmet Restaurant, Disneyland Hotel, Anaheim
- Jan. 23-28 **American Academy of Orthopaedic Surgeons.** The Palmer House, Chicago
- Jan. 25-27 **Medical Technology, Annual Postgraduate Course.** University of Kansas School of Medicine, Kansas City
- Jan. 25-29 **Sixth Postgraduate Course, Internal Medicine (American College of Physicians).** Main Auditorium, Clinic Building, Henry Ford Hospital, Detroit
- Jan. 27-29 **Western Association of Physicians.** Carmel
- Jan. 28-30 **Rocky Mountain Traumatic Surgery Society.** Aspen, Colorado
- Jan. 28-30 **Western Society for Clinical Research.** Carmel-by-the-Sea, California
- Jan. 31-Feb. 7 **Pan-American Congress of Ophthalmology.** Caracas, Venezuela

Please Mark Your Calendar

ISMS ANNUAL MEETING

April 24-27, 1960

Veterans' Memorial Auditorium

Des Moines



HELP MEDICAL EDUCATION PAY ITS OWN WAY

America's medical schools are in serious financial trouble. The reasons are obvious: (1) enrollments have been increased sharply; (2) medical education costs have skyrocketed; (3) income has lagged; and (4) some of the best faculty members are being lured away from teaching and research by better salary offers elsewhere, and if the movement is to be stopped, faculty salaries must be raised.

All of us are familiar with the fund-raising activities of the National Fund for Medical Education and the American Medical Education Foundation, organizations through which businessmen and doctors, respectively, are asked to contribute money for the support of medical education, and thus to postpone the day when both state and private medical schools may be forced to request federal subsidies and accept the federal control that will come along with them. But we doctors, in proportion to our resources, have been far less generous than have businessmen.

The reason may be that doctors are less fully aware of the fact that considerable shares of their contributions to medical schools can, in effect, be charged to Uncle Sam. In 1954, Congress undertook to encourage gifts to educational institutions by increasing the maximum allowable deduction for such purposes from 20 to 30 per cent of adjusted gross income. Thus, if you are a single taxpayer and if your taxable income is \$25,000 after all deductions except charitable contributions and before your personal exemption, and if you wish to make a gift of \$7,500 to a college for its medical school, you can do so for just \$3,354. If you are married and have a taxable income of that same size, the maximum gift of \$7,500 will cost you \$5,000. Of course the larger your income is, the greater share of your gift can be made at government expense. If your income approximates \$75,000, you need pay only one-third of your gift out of your own pocket.

If we have startled you by talking about gifts amounting to thousands of dollars, please be reminded that proportional tax savings are available through smaller donations.

If you haven't previously been making annual

gifts direct to your *alma mater* or to the American Medical Education Foundation, won't you please make a start this year? Or if your donations have been quite modest, won't you consider increasing them? In this area, by spending some of your own money you can force the federal government to spend part of its funds precisely as you direct.

SEMICARCINOGENS

By the time that this appears in print, almost innumerable reasons will have been advanced for disapproving Secretary Flemming's cranberry scare. But it deserves mentioning that the experiments with acetylaminofluorene (the alleged contaminant of some of the recent crops of cranberries) have been discussed in the most recent of the Ciba symposium transcripts, *CARCINOGENESIS: MECHANISM OF ACTION*.^{*} There, one learns that acetylaminofluorene has been no more than a secondary cause of thyroid cancer in rats.

In reading the book, one quickly learns that the emphasis in the work of investigators in that field has shifted during the past 30 years. Previously cancer investigators, like the men who were studying the etiology of the common cold, resembled alchemists in that they were trying to discover *the cause* rather than the *causes*.

Not only are there several routes for the initiation of cancer; there are also various stimuli necessary for the sustenance of cancer cells in some cases. Consequently, cancer research is now directed toward more intricate details, and with this increasing intricacy has come an inevitably greater density of the miasma of confusion.

Certain broad, general principles are, however, evolving. Some carcinogens may act according to the old theory, *in one stage*, by altering the hereditary cellular make-up. Other cancers, however, may require two stages for their development. The first is called "initiation." This is an irreversible alteration of the tissues, as in a mutation. One evidence of this might be hyperplasia.

A second type of stimulus may be necessary for the stage of "promotion," and here we come to the condemned ingredient of the cranberry growers' insecticide. The Ciba conferees discussed various procedures leading to hyperplasia of the thyroid which, when one has fed acetylaminofluorene to rats, may be followed by the appearance of multiple tumors of the thyroid. It follows, therefore, that some substances are incomplete carcinogens, and that acetylaminofluorene is one of them.

Unfortunately, the range of action of "initiators" and "promoters" is as yet unknown, and much work is being done in attempts to find new and

^{*} CIBA FOUNDATION SYMPOSIUM ON CARCINOGENESIS: MECHANISMS OF ACTION, ed. by G. E. W. Wolstenholme and Maevae O'Connor, Boston, Little, Brown and Company, 1959.

pure substances which will be efficacious in each field. Much is also being done on the quantities of substances that are necessary to the production of cancer, for logically the probability of exposure to weak initiators is much greater in the human being than is that of exposure to strong ones. One could conceive that a person might be subjected to a weak initiator for many years—e. g., an inhalant or ingestant—and that after cell mutation had been initiated, exposure to a promoter such as a virus might result in cancer formation.

NEW CONCEPTS IN BONE FORMATION

The use of the electron microscope has brought about many changes in our concepts of physiologic processes both in the test tube of the research worker, and in the body. One of the subjects discussed at a recent symposium on "The Growing Challenge of Disability Control in an Era of Comprehensive Medical Care," conducted by the Liberty Mutual Insurance Company, in Boston, dealt with the relationship between connective tissues and the degenerative diseases of the aged. The implications of the most recent molecular research as it relates to such clinical conditions as arthritis, atherosclerosis, fracture healing and aberrant calcification in general, indicates that cooperative efforts in studying macromolecular structure will radically change our understanding of many body processes.

The specificity of the macromolecular structure of collagen in calcification holds promise of revising our thinking with regard to fracture healing, congenital pseudoarthrosis and bone-tumor growth. Glimcher* has discussed the role of collagen as related to calcification. The initiation of calcification, he depicts as a process of heterogeneous nucleation of apatite crystals from a metastable calcium-phosphate solution by the highly specific stereochemical configuration and crystal structure of native-type collagen fibrils. That the nucleation of the inorganic crystallites requires a precise juxtaposition of groups in the organic matrix was demonstrated by using collagen reconstituted in a number of different fibrillar crystal forms: native (640 Å axial repeat), 220 Å axial repeat, unstructured fibrils, fibrous long spacing and segment long spacing. Of these forms only the native type fibrils (representing one type of aggregation state of the tropocollagen macromolecules) were capable of inducing the formation of apatite crystals when exposed to metastable solutions of calcium phosphate.

The failure of collagen macromolecules and random aggregations of collagen macromolecules both in solution and in the solid state to induce

this phase change further demonstrated that the specificity lies in the specific manner of packing of the collagen macromolecules, and not in the macromolecule itself.

Moreover, the nature of this specificity was further confirmed by experiments which altered the intrafibrillar fine structure of reconstituted native-type fibrils and demineralized bone, resulting in the loss of this property of nucleation catalysis.

When the macromolecules interact to form fibrils with the configuration characteristic of the native state, highly specific stereochemical matching of side chain groups occurs in certain regions of the fibrils. The precise manner in which these regions are able to serve as sites of heterogeneous nucleation is not completely clear. Several possible mechanisms have been discussed. On the basis of experiments in which calcium and phosphate ions were used separately and alternately, it would appear most likely that constituent ions of the apatite lattice in solution interact with side chain groups in the collagen fibril, whose atomic arrangement and lattice spacings closely resemble certain low index planes of apatite.

Bone demineralized with Versene under suitable conditions has also been shown capable of inducing crystal formation. The ability to initiate mineralization does not appear to be specific for bone collagen, however, for a variety of reconstituted native-type collagens from tissues normally uncalcified can be mineralized *in vitro*. Under similar physical chemical conditions, however, freshly dissected, untreated collagen fibres from rat tail tendon, etc., do not calcify, although these same collagens, when extracted and *reconstituted* in the native configuration are able to mineralize. On the basis of similar experiments with *fresh native collagen fibrils*, which following extraction by solutions of high ionic strength and enzymatic treatment *were* shown capable of inducing crystallization, the suggestion was made that *all* collagenous matrices in biological structures are inherently capable of initiating calcification, but under *normal* conditions *other components* of the ground substance inhibit and control this process. The possible role of the acid mucopolysaccharides and their state of polymerization in this process of inhibition and regulation was also discussed.

Other findings of a companion study on embryonic and adult bone were also presented which revealed by high resolution electron microscopy that the minute inorganic crystals *were within the collagen fibrils*, lending further support to the role of the collagen fibril in initiating calcification.

In addition, the results from both studies indicated the mechanism of preferred inorganic crystal orientation and the way in which the size and shape of the crystals were controlled. Thus, one is led to conclude that the process is probably fundamental in biological mineralization generally.

* Glimcher, M. J.: Molecular biology of mineralized tissues, with particular reference to bone. *REVIEWS OF MODERN PHYSICS*, 31:359-393, (Apr.) 1959.

THE JOURNAL *Book Shelf*



BOOKS RECEIVED

BIOPSY MANUAL, by James D. Hardy, M.D., James C. Griffin, Jr., M.D., and Jorge A. Rodriguez, M.D. (Philadelphia, W. B. Saunders Co., 1959. \$6.50).

METABOLIC CARE OF THE SURGICAL PATIENT, by Frances D. Moore, M.D. (Philadelphia, W. B. Saunders Company, 1959. \$20.00).

LECTURES ON INTERPRETATION OF PAIN IN ORTHOPEDIC PRACTICE, by Arthur Steindler, M.D. (Springfield, Illinois, Charles C Thomas, 1959. \$18.50).

THE PHYSICIAN AND THE LAW, SECOND EDITION, by Rowland H. Long. (New York City, Appleton-Century-Crofts, 1959. \$).

ATLAS OF ROENTGENOGRAPHIC POSITIONS, SECOND EDITION, Vols. I and II, by Vinita Merrill. (St. Louis, The C. V. Mosby Company, 1959. \$32.50).

SYMPOSIUM ON GLAUCOMA, ed. by William B. Clark, M.D. (St. Louis, The C. V. Mosby Company, 1959. \$13.50).

YEAR BOOK OF OBSTETRICS & GYNECOLOGY, ed. by J. P. Greenhill, M.D. (Chicago, The Year Book Publishers, Inc., 1959. \$8.00).

BOOK REVIEWS

THAT THE PATIENT MAY KNOW: AN ATLAS FOR USE BY THE PHYSICIAN IN EXPLAINING TO THE PATIENT, by Harry F. Dowling, M.D., and Tom Jones. (Philadelphia, W. B. Saunders Co., 1959. \$7.50).

Nowadays, the old dictum of "Tell the patient nothing, and you won't have to take back anything" is being altered to one of "Tell the patient everything." Patients in this day and age are curious, and have spurious notions about almost any given medical topic. It has therefore seemed necessary for the doctor to take time to explain in detail most phenomena from which the patient suffers. As Dr. Dowling and Mr. Jones say in their foreword to this book, "Many doctors say that they cannot draw well; pages torn from journals have a way of getting lost, and textbook illustrations are usually too technical."

This book supplies sketches, often in two colors, of practical conditions which the patient might ask about, such as the proper method of insulin administration, the physiology of hypertension, and the influence of the emotions on digestion, and provides anatomical drawings of various parts of the body both in health and disease.

The drawings are plain, not achieving the quality of the Ciba illustrations, but their very plainness may be an asset, for they may be easier for the patient to understand. They aren't likely to scare him by revealing all of the horrible intricacies of disease; rather, they leave details of the descriptions to the physician. The reviewer thinks that this may be advantageous, for some of the drawings he has used—ones torn from ad-

vertising material—have proved too dramatic or "gory" for his patients.

This book should be helpful to practicing physicians everywhere.—Daniel A. Glomset, M.D.

HANDBOOK OF POISONING: DIAGNOSIS AND TREATMENT, SECOND EDITION, by H. Dreisback, M.D. (Los Altos, California, Lange Medical Publications, 1959. \$3.50).

This new edition presents, in outline form, the entire problem of poisonings and bites. Unlike many poisoning texts, this one has a short section having to do with the prevention of poisoning and with the legal aspects of this problem.

The poisons are conveniently grouped as to their natures, e.g., pesticides, industrial poisons, household chemicals, medicines, poisonous plants and bites. There is a very concise index so that within these headings the data concerning an individual chemical can easily be found. A large section in the appendix is devoted to listing and describing various types of resuscitation and oxygen equipment.

A surprising amount of information has been compressed into this small book. It will find a ready place in every emergency room and will be a welcome addition to the libraries of Poison Information Centers.—Everett A. Nitzke, M.D.

A COOKBOOK FOR DIABETICS, by Deaconess Maude Behrman. (New York, The American Diabetes Association, Inc., 1959. \$1.00).

This diabetic cookbook contains an explanation of the exchanges and directions about how the diabetic should use them in varying his diet. It tells about the various brands and forms of sugar substitutes, it explains calories and how to calculate them, and it stresses the importance of understanding them. It gives some suggestions about the preparation of vegetables so as to keep the loss of vitamins and minerals to a minimum.

There are several breakfast, lunch and dinner menu suggestions. The lunch-box ideas should be helpful to people who prepare meals either for school child or adult diabetics.

The nice variety of dessert recipes should be most welcome, since the limitations on the diabetic's sugar intake is often more troublesome than any other of his dietetic restrictions. Also, the holiday and change-of-season suggestions should be of great help in giving diabetics some variety in their diets.

The book contains instructions about the canning of fruits and fruit juices without sugar, and gives directions for preparing and packaging fruits that are to be frozen.

Though single copies are \$1 each, a lower price is

charged per book on orders of 10 or more.—*Naomi Winsor.*

I can add nothing to the above opinion which was prepared by an assistant in our office who has given diet instructions to a great many of our patients.—*Loren G. Peterson, M.D.*

CIBA FOUNDATION SYMPOSIUM ON CARCINOGENESIS: MECHANISMS OF ACTION, ed. by G. E. W. Wolstenholme, O.B.E., M.A., M.B., B. Ch., and Maeve O'Connor, B.A. (Boston, Little, Brown and Company, 1959. \$9.50).

This volume represents the 36th in a series of transcripts of colloquia and symposia organized by Ciba Pharmaceutical Products, Inc. Like its predecessors, the book measures 6"x8" (12^{mo}). It contains 48 illustrations.

The symposium of which it is the record was held in London in 1958, and concerned the fundamentals of the cancer problem. The subjects for discussion were the relations of viruses, hormones, immune mechanisms and chemicals in the genesis of cancer. Each subject is discussed by authorities on the subject. The whole book deals with fundamental, basic research.

Nowadays, when many people wouldn't dream of doing anything which "wouldn't sell," or of doing anything which "wouldn't be popular," the Ciba people are undertaking a brave task—presenting to the reading medical public some works on basic research in biochemistry and cell metabolism.

The present volume is an excellent résumé of the current struggle to get behind "the iron curtain" of the cancer problem. As we sit in our offices passing out pills, or stand wielding our knives in the hospitals, we rarely take time to realize that there is a great deal of important medical work being done elsewhere. Subjects such as the ones discussed in this book are, indeed, seldom discussed in the medical journals. Yet they are the foundation for the discoveries of tomorrow.

It would do us good to peruse these esoteric subjects occasionally.—*Daniel A. Glomset, M.D.*

THE CARE OF MINOR HAND INJURIES, by *Adrian Flatt, M.D.* (St. Louis, C. V. Mosby Company, 1959, \$9.50).

This new book is devoted exclusively to minor injuries of the hand, which of all injuries are the most frequent. It presents opinions and conclusions based on the author's own practice, and therefore consists of original material.

The author's background is in plastic as well as orthopedic surgery, and thus he is eminently qualified to write this book. He has had extensive experience in large hospitals and outpatient clinics in England and in this country, and he is now a staff member of the Department of Orthopedic Surgery at the S.U.I. College of Medicine.

The subject matter in the text is well organized, and is specific in the details of diagnosis and treatment. The volume begins with a brief summary of the functional anatomy of the hand, and proceeds to general principles of care, surgical technics and the classification of injuries.

Dr. Flatt's style is colorful, making for pleasant reading. The illustrations include many original drawings and photographs enlarged to show fine details of the hand and fingers.

A feature of the book is the material on cross-finger and thenar flaps. It is hoped that the reader will adhere strictly to the indications for these local flaps and avoid the pitfalls described, for otherwise, as the author points out, "the operation can cripple the hand."

All in all, this book fills a need that is not met by any other. It is highly recommended to all surgical residents, whether in orthopedic, plastic or general training. It should be on the desks of all surgeons who deal with these frequent "minor injuries" of the hand, ones which frequently result in a major disability to the patient.—*Julian M. Bruner, M.D.*

LONG-TERM ILLNESS: MANAGEMENT OF THE CHRONICALLY ILL PATIENT, ed. by *Michael G. Wohl, M.D.* (Philadelphia, W. B. Saunders Company, 1959. \$17.00).

This book considers the many aspects of chronic illnesses of all types. The first portion is devoted to non-specific phases of the problem, including such topics as hospitalization, home care, general aspects of rehabilitation and the psychologic difficulties of the chronically ill. The second and larger portion is devoted to the therapy of specific diseases—rheumatoid arthritis, gout, heart disease, cancer and the like.

Generally, the greater portion of the book imparts information of the sort that is to be found in any of the standard textbooks of medicine. The remainder highlights many of the problems of chronic disease and provides an excellent introduction to the problem of rehabilitation.—*Dennis H. Kelly, Jr., M.D.*

MYCOBACTERIAL AND MYCOTIC DISEASES IN CHILDHOOD

A conference on mycobacterial and mycotic diseases, with special reference to childhood, will be held in New Orleans on December 10 and 11, under the sponsorship of the Tuberculosis Association of Greater New Orleans (TAGNO), the Orleans Parish Medical Society, and the Tulane and LSU medical schools. There will be no registration charge.

The presentations will include "Cutaneous Tuberculosis in Children," by Dr. Ralph V. Platou, of Tulane; "Rural Epidemiology of Tuberculosis in Louisiana," by Dr. J. D. Martin, medical director of the Louisiana Department of Public Welfare; "Tuberculin Testing," by Dr. M. L. Furcolow, director of the USPHS Communicable Disease Center at Kansas City; "Medical Treatment of Tuberculosis in Children," by Dr. Margaret H. D. Smith, director of the Children's Chest Service at Bellevue Hospital, New York City; "Infections in Childhood," by Dr. John Chapman, of Southwestern Medical College, Dallas; "Differentiating M. Tuberculosis, Anonymous Mycobacteria and Saprophytic Acid-Fast Bacilli," by Dr. Maurice Tarshis, of the VA Hospital in Alexandria, Louisiana; and "Pathogenic Mycobacteria Other Than M. Tuberculosis," by Dr. Ernest Runyon, of the VA Hospital in Salt Lake City. At the close of the meetings there will be a panel discussion on "Deep Mycoses."

STATE DEPARTMENT OF HEALTH



COMMISSIONER

INFLUENZA PROSPECTS

According to the latest U.S.P.H.S. bulletins, the Surgeon General's Advisory Committee on Influenza Research feels that no widespread attacks of influenza can be anticipated at present. The group states that localized outbreaks of the disease undoubtedly will occur during the next several months, however, and it further predicts that the predominant type of influenza this fall and winter will probably be the A-2 or Asian strain, rather than Influenza E which was the major form last year.

The Committee emphasized that vaccination should be planned for persons in the following categories, ones almost identical with those set up two years ago by the Iowa State Influenza Committee:

1. Persons for whom influenza might represent a definite health risk. (This group would include persons with cardiovascular disease, pulmonary disease, rheumatic fever or diabetes, elderly people with chronic illness of any type, and pregnant women.)

2. Persons responsible for the care of the sick.

3. Persons responsible for providing essential public services such as law enforcement and fire protection.

4. Industrial and commercial employees whose employers wish to keep absenteeism from rising.

Recent work has shown that the polyvalent influenza vaccine which now contains the Asian strain of virus affords greater protection when it is given in two 1.0 cc. doses spaced from two to four weeks apart. To maintain maximum protection throughout the entire winter season, if the first injection or injections have been given during the fall months, one must give a second or booster injection during January or February. The intradermal method of injection of the influenza vaccine was used by some physicians two years ago, primarily during the extreme vaccine shortage as a means of "stretching" the supply. The only current use of this technic is in situations where very small doses might be preferable, as for very small children. Two injections of 0.5 cc. each should be given children between five and 12 years of age.

POLIOMYELITIS—1959 UNITED STATES PRELIMINARY REPORT

The October 18 report from the Public Health Service analyzing the preliminary data gathered on the 1959 poliomyelitis cases for the entire United States contains the following information:

There is a marked shift in the pattern of the disease. In pre-vaccine days, it spread over large areas and attacked all population and socio-economic groups. In 1959, the nationwide paralytic attack rate was 1.6 per 100,000 persons, but many more colored people than whites were affected. In the white population, the rate was 1.4 per 100,000, but in the non-white it was 3.2.

In prevaccine epidemics, the attack rate was relatively high among older children and young adults, but during 1958 and 1959 children under five years of age have been the principal victims. Almost 90 per cent of all poliomyelitis cases in the nation occurred among persons under 30, although in a few communities in Massachusetts and in the City of Seattle there were higher proportions in the older age groups.

Children under five years of age accounted for 37.6 per cent of all cases this year. Over 50 per cent of children under five have not been vaccinated. The five-to-nine-year-olds accounted for 23.1 per cent, and 30.1 per cent of the cases occurred among teenagers and persons in their twenties.

As in the prevaccine era, poliomyelitis continues to follow a cycle. In other words, there are years of high incidence and years of low. Both 1958 and 1959 were apparently years of relatively high incidence. A total of 4,245 paralytic cases had been reported from January 1 to October 9 of the current year.

The vaccine has continued to prove highly effective in the vaccinated population. Among 3,173 paralytic patients whose vaccination status had been reported by October 5, there were 551 who had had the full course of three or more injections. Of the paralytic cases, 82.6 per cent were among the unvaccinated or partially vaccinated, 64.2 per cent having had no vaccine and 18.5 per cent having had only one or two injections. The Bureau of the Census is conducting a survey to determine the vaccination status of the population, and the

resultant information will be available on about December 1.

Rough estimates made last June place the number of fully-vaccinated people at around 68,000,000. Approximately 36,000,000 persons in the vulnerable under-40 age group had had no vaccination at all, and around 5,000,000 of these were infants and preschool children.

Since July 1, however, around 25,000,000 doses of vaccine have been distributed in the United States. These would be sufficient to increase the number of persons with at least three injections by about 18,000,000.

Major epidemics this year with attack rates of over 15 per 100,000 occurred in Des Moines, in Kansas City, Missouri, and in Little Rock. Moderate epidemics with attack rates of five to 15 per 100,000 population occurred in 20 other communities with small, highly concentrated outbreaks reported from 19 communities.

Fifty-four cities this year have conducted surveys to learn who the unvaccinated are and where they live. The findings have reinforced the experts' conviction that concentrated vaccination drives must be conducted among certain groups and in certain areas if poliomyelitis is to be controlled. Following these surveys, many cities undertook vaccination campaigns.

CONCLUSIONS REACHED AT NATIONAL CONFERENCE OF PHYSICIANS AND SCHOOLS

The pros and cons of national norms for fitness, the values of periodic health examinations of school children, how to find time for teaching health and physical education, standards of study for health education and classification of pupils for physical education—all of these were major topics at the Seventh National Conference of Physicians and Schools held October 13-15 at Highland Park, Illinois. There were approximately 250 participants, and a half-day was spent on each topic.

The Conference was unable to agree on whether there should be national norms for physical fitness. Among the dangers cited were: Many youngsters who are unable to meet the norms will thus be classified as "inferior." The true measure of a child's progress is against himself rather than against norms. Norms, rather than health benefits may become the objective of the program. Tests may consume time that can better be used for beneficial activities. Overemphasis on norms may tend to overstandardize the program. The pros argued that it is idle to debate whether there should be norms for in fact they now exist, since millions of children have been or are being tested.

It was generally agreed that periodic health examinations of school-age children are worthwhile, and that a physical examination should include a complete history, a thorough physical exam,

counseling about problems of healthful living and the necessary immunizations. At least four physical examinations should be performed during the school life of each child, and they should each be conducted in the office of the child's family physician, but yearly physical examinations such as are required by the laws of some states are an unwise expenditure of money and professional time.

It was pointed out that children's excuses from physical education must be signed by doctors rather than parents, and that physicians must be interested and informed about the physical education curricula if they are to issue such excuses intelligently. In requiring that a particular child be exempted from physical education, the doctor should state his reasons, and should enumerate the sorts of activities within or outside of formal instruction in which the youngster can safely be permitted to participate.

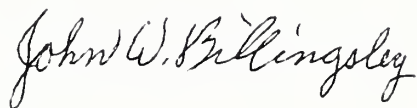
MORBIDITY REPORT FOR MONTH OF OCTOBER—1959

Disease	1959 Oct.	1959 Sept.	1958 Oct.	Most Cases Reported From These Counties
Diphtheria	0	0	1	
Scarlet fever	158	70	186	Jefferson, Johnson, Polk
Typhoid fever	0	5	3	
Smallpox	0	0	0	
Measles	33	13	223	Scott
Whooping cough	41	22	2	Des Moines, Scott
Brucellosis	17	10	9	Black Hawk, Dubuque, Iowa
Chickenpox	123	12	67	Des Moines, Story
Meningococcic meningitis	2	0	3	Sac, Scott
Mumps	52	3	177	Polk, Scott
Poliomyelitis	39	114	8	Black Hawk, Polk
Infectious hepatitis	7	9	6	Pottawattamie
Rabies in animals	16	8	20	
Malaria	0	0	0	
Psittacosis	0	0	0	
Q fever	0	0	0	
Tuberculosis	51	27	47	For the state
Syphilis	111	121	126	For the state
Gonorrhea	112	86	103	For the state
Histoplasmosis	0	0	0	
Food intoxication	0	5	2	
Meningitis (type unspec.)	19	5	2	Chickasaw, Jones, Keokuk
Diphtheria carrier	0	0	0	
Aseptic meningitis	3	10	7	Polk
Salmonellosis	5	8	6	Polk
Tetanus	2	1	1	Hardin, Webster
Chancroid	0	0	0	
Encephalitis (type unspec.)	3	2	3	Fayette, Hamilton
H. influenza meningitis	0	0	0	
Amebiasis	1	1	38	Boone
Shigellosis	2	1	3	Webster
Influenza	4	0	6	Polk

President's Page

Your State Society officers were greatly pleased with the good attendance of doctors and Auxiliary officers from all parts of the state at the Special Conference on Legislation in Des Moines on November 8, and were glad to note the enthusiastic response which they gave to the ideas presented there. It seems now that Iowa doctors are ready to cooperate with other groups and individuals in preserving the free-enterprise system and in saving the American public from socialized medicine.

It is certain that each physician and each doctor's wife who attended the Des Moines meeting will succeed in making the members of his or her county organization eager to help with this new project.

A handwritten signature in cursive script, reading "John W. Billingsley". The signature is written in dark ink and is positioned above the printed name.

President



Iowa Academy of General Practice

THE 1959 AAGP STATE OFFICERS' CONFERENCE

V. L. SCHLASER, M.D.

The AAGP State Officers' Conference was held on September 26 and 27 in Kansas City, Missouri. This meeting each year is of utmost value, and all officers of each state chapter are urged to attend. The program for it is formulated from the problems, questions and suggestions that have been submitted to the AAGP office in Kansas City and from those that have been brought to the attention of the members of the committee in charge of planning the State Officers' Conference. Primarily, the meeting is designed to facilitate an exchange of ideas for the improvement of state chapter operations, but all members of the Academy, be they officers or not, could profit from listening to the discussions that take place there.

The problems of the 52 state chapters differ in many ways. What may be a problem for the California Chapter, with almost 3,000 members, is probably of little concern to the North Dakota Chapter, with fewer than 100, and vice versa.

This year there were five major topics on the program, each subdivided into various phases. "Chapter Office Operations" was broken down into "Recruiting and Enrollment," "Transfers," "Changes of Status and Address," "Reporting of Postgraduate Study and Reelection," "Collection of Dues" and "Automation in Office Operations." Many of the state chapters are not financially in position to maintain offices. We, of the Iowa Chapter, are very proud of the efficiency of ours, which is operated by an executive secretary. Though many chapters described problems that they have encountered in maintaining such facilities, ours in that area are minor, except for one that confronts all chapters—that of getting individual members to comply with Chapter I, Section 3 of the AAGP By-Laws, a section which says a record of postgraduate study shall be furnished *annually* by each active member to the state chapter secretary. This is a responsibility of each individual member, and if each would comply with it, there would no longer be any such problem.

CHAPTER PUBLICATIONS

The second major topic was "Chapter Communications," and it was subdivided into "Methods of Communication With Members," "Purposes of Chapter Publications," and "Improving Chapter Publications." All chapters utilize official letters to members for conveying certain information and announcements. In addition, a majority of state chapters have periodicals, though they vary considerably, some being printed and others mimeographed, some being issued monthly and others bi-monthly, quarterly or irregularly, and some containing paid advertising and others not. The Iowa Chapter issues occasional official letters and has a publication, the *HAWKEYE GP NEWS*, but is very fortunate in having a third method of communication with its members, this section each month in the *JOURNAL OF THE IOWA STATE MEDICAL SOCIETY*.

The discussion on the subject of communications was quite varied. There was general agreement that a standard page size should be established for those GP publications that sell advertising space so that advertising mats could be a uniform size. Consideration was given to the idea of having the national AAGP office act as a clearing house for the sale of ad space in state publications.

A publication is of no value unless it is read, and a survey which was reviewed during the meeting had determined that too frequent or excessively thick issues cut down on the thoroughness of readership. The Iowa Chapter's publication, the *HAWKEYE GP NEWS*, is one of which we are very proud. We know it is attractive, has "class" and is read. We give credit for these qualities to our managing editor, Mr. M. S. Enabnit.

MEDICAL EDUCATION

The third topic discussed was "Undergraduate, Graduate and Postgraduate Training," the subdivisions being "Preparing the Medical Student for General Practice," "Graduate Preparation for General Practice," and "Postgraduate or Continuation Study." The gist of the conversation about the first of these was that by the time a medical student is a senior he has already decided to spe-

cialize. He has done so because, consciously or unconsciously, he wishes to emulate one of his clinical professors or instructors, all of whom are specialists. Unfortunately, at the majority of our medical schools, students have no specific contracts with general practitioners, or come under their influence only after they have decided upon specialties. I might mention that the last three preceptees for whom I have been the preceptor—students who had just completed their junior year in medical school—had already selected their specialties. One had chosen psychiatry; one endocrinology; and one pediatrics. The consensus at the State Officers' Conference was that in all fairness, medical students should be exposed to general practice as soon as they are to internal medicine, surgery, obstetrics, etc.

It was noted that many states contain areas in which members have difficulty securing Category II credit, and that in other states, especially Hawaii, members have few opportunities of earning Category I credits. Fortunately, we in Iowa have neither of these problems, there being more than ample opportunities in both categories.

The fourth topic, "Hospitals" was subdivided according to the sizes of communities. The major problem in the less populous areas appeared to be one of a shortage of beds. The medium-sized

communities reported few difficulties. A review of hospitals in metropolitan districts have revealed a small number of institutions that discriminate against GP's and many where there are no organized general practice departments or sections.

The Iowa Chapter Annual Meeting overlapped the State Officers' Conference, and I was consequently unable to remain in Kansas City for the sessions on September 27, when the topic for discussion was "Legislation and Public Policy."

We of the Iowa Chapter believe that most of our problems are minor, but we are cognizant of the fact that an organization such as ours cannot become static, cannot rest upon its achievements and must keep moving forward for the benefit of the general practitioner.

Help your central office to maintain an accurate mailing list. Send your change of address promptly to the Journal, 529-36th Street, Des Moines 12, Iowa.



Dr. I. V. Ponseti and Mrs. Steindler in the Arthur Steindler Memorial Library at the SUI College of Medicine, on the day of its dedication, six weeks ago.

THE DOCTOR'S BUSINESS

How Much Life Insurance?

HOWARD D. BAKER

WATERLOO



Very frequently, a client confronts us with this question: "How much life insurance should I have?" He expects an answer in terms of an average or a rule of thumb, and indeed there are many such formulae in existence today. According to one of these, a person should spend approximately 10 per cent of his annual income for life insurance. How much insurance will this buy? We all know that \$1,000 may pay the annual premium on a \$15,000 Retirement Income policy, or it may pay the annual premium on \$170,000 of Decreasing Term insurance. Of course age and the insurability of the applicant are important factors, but a great deal depends on the type of policy he offers to buy. Many different sorts of packages can be bought with \$1,000 per year.

Another fallacy in this approach is the assumption that everyone can afford to spend 10 per cent of his annual income for insurance—no more and no less. This, obviously, just isn't true!

A second approach is that of fixing the dollar amount of insurance according to income. Some people advocate amounts equal to four or five times annual income. There are many pitfalls in this approach. For example, it would dictate \$300,000 of insurance for a doctor 55 years of age and single who has a net income of \$75,000 and assets worth \$450,000, and it would dictate \$80,000 of insurance for a physician 33 years of age who earns \$20,000 per year, has a 30-year-old wife and four young children, is \$25,000 in debt and has no income-producing assets. After applying this rule, neither would have the proper amount of insurance in his portfolio.

THE PROBLEM IS AN INDIVIDUAL ONE

In our opinion there can be no stock answer to the question "How much life insurance?" Every such question should be answered on an individual basis, after a thorough analysis of the man's needs, present insurance, other assets and, finally,

his ability to carry the premium that his individually ideal program would involve. To attempt applying an "average" would be a bit like putting the man's head in an oven and his feet in a freezer and contenting oneself with the observation that *on the average* he must feel just right. Or more seriously, such an approach to our clients' insurance problems would mean that only a handful of them would have the *right* amount of protection, though all of them had the *average* amount.

Following are some basic concepts that we advocate:

1. With the realization that insurance is a disaster type of program, one should write down what he wants to provide for his family in case of his death—i.e., how much for debt clearance, for children's education, for estate costs and for current expense and monthly income.

2. He should determine what his present resources, including present insurance and *all other* assets will do toward fulfilling those needs.

3. Next, he should determine how much insurance he needs to care for the remainder of his dependents' needs. (An insurance advisor will recommend various term contracts for meeting temporary responsibilities. Permanent ones will probably best be satisfied with a low-cost permanent contract.)

4. Finally comes the question of whether the cost of the additional insurance is reasonable and within the client's budget. If not, he must trim his estimates of his dependents' needs and/or use more term insurance.

By following this approach, we are not considering our client as an "average" or as a "statistic"; we are considering him as an individual.

In summary, we advise (1) seeking an impartial insurance advisor; (2) taking an individual approach; (3) being realistic in weighing needs; and (4) buying insurance for *protection*, rather than for investment purposes.



Woman's Auxiliary News



OUR PRESIDENT SAYS—

October seems to be the kick-off month for many of the voluntary health organizations, and fortunately I have had opportunities to attend several of their meetings throughout the state. On those occasions I have had excellent chances to visit with many doctors' wives and to observe them working with lay people on health projects. I wish we could present Oscars to them for their contributions to medical public relations!

The AMA Conference on Aging held in Minneapolis was an excellent example of the medical profession's work with lay groups. Those who went to the meeting under the impression that the For-and-Bill might be the answer began to realize the full impact of this problem. It was clearly demonstrated that the difficulties of the aging are much more complex than many people have thought—that the question of who is to pay their medical bills isn't the only one that must be answered. "Aging—a Community Responsibility" was the theme of the meeting and the thought we carried home with us. Constructive ideas for action were given us on retirement planning, on the necessity for reconsidering rules calling for compulsory retirement at age 65, health insurance for the elderly, and projects for reawakening the interests of senior citizens—adult education, hobbies, and park, library and community recreation programs.

Our October Auxiliary Board Meeting was quite successful and well attended. We were happy to welcome five county Auxiliary presidents to their first board meeting: Mrs. E. E. Lister, of Dallas-Guthrie; Mrs. Louis Goldberg, of Polk; Mrs. Joseph Lederman, of Mahaska; Mrs. E. J. Marble, of Marshall; and Mrs. D. S. Egbert, of Webster. We really missed some of our faithful "old timers," and hope they will be back with us soon.

Old Man Weather played havoc with the attendance at our Future Nurse Club convention, and only one-third of those who made reservations braved the snow- and ice-covered roads. Our thanks to Mercy Hospital, of Des Moines, our host for this year, and the many others who shared in presenting the very interesting program. We hope that those of you who are working with FNC's will send us information about your clubs and double your efforts to see that they have lists of the schol-

arships and loan funds available, since the 500 Cancer Society scholarships that usually have been given each year have been cancelled.

If you need or can use any program material in the near future, get in touch with the legislative contact man or woman in your county. He or she will have a great deal to report to you from the Special Conference on Legislation that was held recently in Des Moines.

—MRS. E. A. LARSEN

FUTURE NURSES' CLUB CONFERENCE

The annual Future Nurses' Club Conference was held at Mercy Hospital Nurses' Home, in Des Moines, on Friday, November 6. The weather man was wholly uncooperative, for he provided a record-breaking "fall" snowstorm that made it impossible for the representatives of many of the clubs to attend. There had been 150 reservations, but a far smaller number of people came.

The program, however, proceeded as scheduled, and the participation of the clubs in attendance was 100 per cent enthusiastic. Miss Feinberg, a senior nursing student at Mercy Hospital, Des Moines, and a former FNC member, was master of ceremonies, and Miss Ann Kellar, another student nurse and former FNC member, moderated a panel composed of FNC members from Polk County. Dr. B. C. Barnes, chief of staff at Mercy Hospital and president of the Polk County Medical Society, welcomed the girls, as did Mrs. E. A. Larsen, president of the State Auxiliary.

The Mercy Hospital Nurses' Chorus and a skit, "Parody on the Lawrence Welk Show," performed by a group of student nurses, constituted the entertainment features. Mrs. Fred Van Rheen, of the Mercy Hospital Guild, gave a talk on the topic "Do You Really Want to Be a Nurse?" and a student nurse made a presentation entitled "This Is How It Is Done" as preface to a "What Would You Like to Know?" question period. Luncheon, served in the hospital cafeteria, was followed by a tour of the Nurses' Home and the Hospital. Coke time followed the tour before the girls and their advisors started for their respective homes.

COUNTY AUXILIARIES

Clay

Mr. Donald King, son of Dr. and Mrs. D. H. King, of Spencer, was married to Miss Carroll Ann Lindstrom at Lakewood Methodist Church, Lakewood, Ohio, on March 31, 1959. Don completed naval command training in October, and he and his wife will be living in Hawaii for two years, while he is radar man assigned to the *USS Forester*.

Mahaska

The Mahaska County Medical Auxiliary held a luncheon meeting on November 10 at the Elmhurst Country Club, Oskaloosa. Honored guests were Mrs. E. A. Larsen, the state president; Mrs. E. A. Vorisek, the fourth vice-president; and Mrs. Hazel Lamme, the administrative secretary. Attending from Knoxville were Mrs. D. H. Hake and Mrs. D. A. Mater, and from Sigourney Mrs. J. C. Hooley and Mrs. R. G. Gillett. We are hoping that these and other members-at-large will attend our future county meetings. Mmes. Larsen, Vorisek and Lamme gave us details on current projects and activities, and were most inspiring and helpful to our organization.

Polk

The Polk County Medical Auxiliary held its regular meeting in the Orchard Room at the Kirkwood Hotel, Des Moines, on Friday, November 13. Mr. Richard Fernbach, director of the Des Moines planning and zoning department spoke on the topic "A New Face for Your City."

The Polk County Auxiliary has a Christmas card plan by which it hopes to raise funds for the purchase of new medical equipment and furnishings for the Des Moines Health Center, a Community Chest agency. As usual, the project was presented to the council of the County Medical Society for approval before any plans were made. Immediately upon receipt of that sanction, the Auxiliary committees set out to raise at least \$1,500. Letters were sent to members of the Society asking for contributions of \$15, in return for which their names will be mailed to all other members of the Society in place of the physicians' personal Christmas greeting. The Auxiliary plans to

handle the mailing and the postage on the special cards, which in itself is a major operation. Any funds that are received in excess of the amount needed to finance the Health Center project will be contributed to the American Medical Education Foundation.

1960 ESSAY CONTEST

The Iowa State Medical Society has again approved the Auxiliary's sponsoring the AAPS Essay Contest for High School Students. The topics from which the contestants may choose are the same as in previous years, namely: "The Advantages of Private Medical Care" or "The Advantages of the American Free Enterprise System." National prizes total \$2,675, with \$1,000 as first prize, \$500 as second prize and 12 additional cash awards. Cash prizes are to be awarded at the state level to the students who win the top three ratings, and the three winning entries in the state contest will be forwarded to the national competition.

Essays should be submitted to your county medical society no later than March 1, 1960, so that the winning entries from each county can be put into the hands of the State Medical Society's contest judges no later than March 15. The three best essays from Iowa must reach the AAPS national headquarters in Chicago on or before April 1.

Discuss this project with your county medical society, secure its approval and sponsor the contest in your county this year! A packaged library of AAPS Essay Contest materials is available at the State Society's office, 529-36th Street, Des Moines.

THE ISMS SPECIAL CONFERENCE ON LEGISLATION

The Special Conference on Legislation presented by the Iowa State Medical Society at the Savery Hotel, Des Moines, on Sunday, November 8, was attended by the following officers or alternates of the Woman's Auxiliary: Mrs. E. A. Larsen, Mrs. R. F. Nielsen, Mrs. Leo Pearlman, Mrs. E. A. Vorisek, Mrs. L. J. Henderson, Mrs. B. F. Kilgore, Mrs. C. A. Trueblood, Mrs. L. V. Larsen, Mrs. M. A. Blackstone and Mrs. M. O. Larson. Invitations were issued to the officers and councilors of the Auxiliary since the ISMS feels that an informed Auxiliary's participation is very important.

You will hear from these representatives regarding the assistance that you can give in the legislative program.

WOMAN'S AUXILIARY TO THE IOWA STATE MEDICAL SOCIETY

President—Mrs. E. A. Larsen, 323 Oak Street, Centerville
President-Elect—Mrs. R. F. Nielsen, 919 Washington Street, Cedar Falls

Secretary—Mrs. L. F. Henderson, 304 Seerley Street, Cedar Falls

Treasurer—Mrs. J. H. Matheson, 4321 California Drive, Des Moines 12

Editor of THE NEWS—Mrs. H. C. Merillat, 116 Lincoln Place Drive, Des Moines 12



The Clinton County Medical Society

W. M. WALLIKER, M.D., AND RALPH F. LUSE, M.D.

CLINTON

The Clinton County Medical Society was first organized in 1857, and as one of the first six to be established, can claim to be one of the pioneer societies in the state. Its first officers were Dr. A. B. Ireland, Camanche, president; Dr. A. P. Hudson, Lyons, vice-president; and Dr. Asa Morgan, DeWitt, secretary.

Of the 16 practicing members at the onset of the Civil War, 12 answered their country's call, and served with honor and distinction.

The first meeting of the Society following the War was held at DeWitt in January, 1869. The organization was then reestablished and incorporated, the articles being signed by Drs. P. J. and H. S. Farnsworth, C. H. Lathrop, A. J. Hobart, G. F. Wetherell, A. Reynolds, Henry McCormick and O. E. Deeds, and by the pre-war president, Dr. Ireland.

Dr. Lathrop compiled one of the first medical directories in the state. From the minutes of the early Society, one can judge that he was a man of more or less mechanical ability, since he devised a number of appliances for the management of fractures and other conditions. He also wrote a history of the early medical profession in Clinton County, from the beginnings to 1877. From this book, it appears that the early physicians were more particular in regard to the Code of Ethics than are many present-day physicians. Two of the members of the Society were expelled because they had agreed to act as "poor doctor" for lower than the usual fees. In 1870, Dr. Lathrop became affected by some type of spinal disease that kept him from walking, and he practiced from a wheelchair for several years thereafter.

Dr. Daniel Langan, of DeWitt, was the first delegate to represent the Clinton County Medical Society at a meeting of the American Medical Association. That was in 1872.

Most of the older doctors who received their medical education at the State University of Iowa will remember Dr. P. J. Farnsworth, or as he was familiarly called, "Pappy" Farnsworth. In 1868, he was elected to fill the chair of materia medica and diseases of children at that institution, and he held

the position for many years. That old-time doctor, with his long Prince Albert coat and stooped shoulders, has long since passed to his reward, but all who knew him will ever revere his memory, for he was a kindly man who went about doing good.

Dr. Albert Reynolds, a native of Vermont and a graduate of that state's medical school, located in Clinton in 1869, and remained there until 1873, when he was appointed as the first superintendent of the State Hospital at Independence. He remained there for a number of years, but then he resigned and returned to Clinton and practiced there until his death. It is doubtful that any physician who ever practiced in Clinton was held in higher esteem both by his colleagues and by the laity. His son, Dr. Harry R. Reynolds, practiced in Clinton for many years prior to the outbreak of the First World War, when he entered the armed service. Dr. Reynolds, it may be worth mentioning, married a daughter of Dr. D. S. Fairchild, Sr., who practiced surgery in Clinton for many years and who was the first editor of the JOURNAL OF THE IOWA STATE MEDICAL SOCIETY (1911-1929).

We honor the memories of those pioneer physicians who practiced under the most adverse conditions. By the light of the tallow candle or the kerosene lamp, they welcomed the newborn babe and comforted those whose lives were nearing their end. When we realize that in their day there were no hospitals, laboratories, trained nurses, antitoxins, serums, antibiotics, x-rays or many of the other aids to diagnosis and treatment that we enjoy, we marvel at their attainments and wonder whether without such aids we could have done as well. Confidants, friends and advisors, they played their parts by easing the pain of patients whose illnesses they couldn't cure, as well as applied the best medical principles of their day. They left us a priceless heritage by exemplifying the best of the art of medicine.

There have been several changes in the operation of the Clinton County Medical Society during the 100-odd years of its existence. In the early 1930's—the depression years—we had to adopt a

new constitution and by-laws and had to form a non-profit corporation to deal with the federal government when we provided care for WPA employees and their families. The money was paid to the corporation and then to the individual doctors in equal shares, after some money had been held out for a savings account.

At about that time, Dr. W. H. Foster conceived the idea of having a turkey dinner for members of the Society during November. His idea was acted upon, and the occasion was so enjoyable that it was made an annual affair. Dr. Kurt Jaenicke was made chairman of the event, and he kept on with it through most of the succeeding years. Pressure must have been brought to bear, for the doctors' wives were included. Then it was decided to hold no Medical Society meetings during July and August, and to have picnics in June and September.

Please Mark Your Calendar

ISMS ANNUAL MEETING

April 24-27, 1960

Veterans' Memorial Auditorium

Des Moines

After several false starts, a Woman's Auxiliary was formed, and it has been highly successful.

A few years later, the tumor clinic was formed and has been under the direction of Dr. John Stewart ever since.

NEW MEDICOLEGAL FILM

The serious consequences of an inadequate post-mortem medical examination are brought to focus in "A Matter of Fact," the latest film in the medicolegal series being provided to the profession by the Wm. S. Merrell Company. It was premiered August 24, and is now available for showing.

The public and doctors often do not understand the criminal and civil implications which may stem from an inadequate postmortem. Innocent men may be falsely accused, insurance claims may not be honored, and many other problems may result. In a suspenseful drama, the more serious implications are highlighted. The film portrays a typical situation in which an innocent man is accused of murder as a result of the decision made by a poorly trained county official. The AMA and the American Bar Association cooperated with the pharmaceutical manufacturer in this project.

Requests for opportunities to show this picture should be addressed to the Company, at Cincinnati 15, Ohio.



This is a group of Iowa physicians and their wives who were guests at the Eli Lilly & Co. plant in Indianapolis on October 22 and 23. The Lilly research staff presented a symposium at the county hospital, for which the AAGP members in the party earned three credit hours, and on Saturday afternoon in Lafayette, the Purdue and Iowa football teams played—though not to the entire satisfaction of the Iowa partisans.

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